

1044b UIC - EAST POPLAR OIL FIELD ENFORCEMENT CASE
SDWA 1431
Folder ID: 13569 2004 Privileged

East Poplar Oil Field
Enforcement Case
Safe Drinking Water Act §1431
Officer: Nathan Wiser

Release
after
retraction
(PII)



*** TX REPORT ***

Region 8



13569

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 8

999 18TH STREET - SUITE 300

DENVER, CO 80202-2486

<http://www.epa.gov/region08>

Fax Transmittal Cover Sheet

TO Toni GRAYBULLAgency / Company BIA Poplar Agency Ft. RockCity Poplar State MTFax Number 406 - 768 - 3405Phone Number - 3446Number of Pages 2 incl. this coverFrom Nathan WisenPhone Number 303 312 6211

COMMENTS Notice of Public Meeting



LAND & WATER CONSULTING, INC.

1120 Cedar Street • P.O. Box 8254 • Missoula, Montana 59807 • Tel (406) 721-0354
E-mail info@landandwater.net • Fax (406) 721-0355

July 7, 2004

Nathan Wiser
U.S. EPA
Office of Enforcement, Compliance & Environmental Justice
Technical Enforcement Program
999 18th Street, Suite 300
Denver, CO 80202-2466

RECEIVED
JUL 2004
Office of Enforcement
Compliance & Environmental
Justice

RE: Public Meeting Notice for Water Pipeline & Groundwater Study

Please take notice of the public meeting concerning the water pipeline for the East Poplar Oilfield area and groundwater monitoring study for the southern oilfield area.

PUBLIC MEETING

EAST POPLAR OILFIELD AREA WATER PIPELINE & PUBLIC GROUNDWATER MONITORING STUDY

Date/Time: Wednesday, July 21st, 7:00-8:00 pm
Location: Auditorium, Fort Peck Comm. College

Land & Water Consulting of Helena will present the results of a ground water study and discuss the construction of a new water pipeline to serve homes in the East Poplar Oilfield area. At the meeting, we will discuss the ground water conditions in the East Poplar Oilfield area, ongoing ground water monitoring activities, home site drinking water monitoring activities, and the construction of a drinking water pipeline.

For more information contact: Charlie Vandam, Land & Water Consulting (406) 721-0354

Sincerely,

Charlie Vandam
Land & Water Consulting, Inc.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8

2001 JUL 20 PM 1:45

FILED
EPA REGION VIII
HEARING CLERK

In the matter of:

Docket No. SDWA-08-2004-0035

Murphy Exploration & Production Co.,

Administrative Order

Pioneer Natural Resources USA, Inc., and

On Consent

Samson Hydrocarbons Co.,

("AOC")

Respondents.

Replacing Two Emergency

East Poplar Oil Field

Fort Peck Indian Reservation

Montana

Administrative Orders Docket Nos.

SDWA-8-99-68 and SDWA-08-2001-33

Proceedings under Section 1431(a) of the
Safe Drinking Water Act,
42 U.S.C. §300g-i(a)

WHEREAS, the United States Environmental Protection Agency ("EPA") Region 8 previously issued two unilateral Emergency Administrative Orders (as amended) under Section 1431(a) of the Safe Drinking Water Act (docket numbers SDWA-8-99-68 and SDWA-08-2001-33), concerning contamination of an underground source of drinking water ("USDW") in the East Poplar Oil Field, on the Fort Peck Indian Reservation in northeastern Montana; and

WHEREAS, Murphy Exploration & Production Company ("Murphy"), Pioneer Natural Resources USA, Inc. ("Pioneer"), and Samson Hydrocarbons Company ("Samson Hydrocarbons") are the Respondents to those orders; and

WHEREAS, Murphy and Samson Hydrocarbons each filed Petitions for Review challenging the previous EPA orders; and

WHEREAS, all of the various Petitions for Review of EPA's previous orders are now pending in the United States Court of Appeals for the Tenth Circuit; and

WHEREAS, EPA and Respondents Murphy and Samson Hydrocarbons have been engaged in settlement discussions with the assistance of the Tenth Circuit Mediator; and

WHEREAS, EPA and Respondents Murphy, Pioneer and Samson Hydrocarbons desire to resolve the matters covered by EPA's previous orders without further litigation; and

WHEREAS, EPA asserts that its authority for entering into this Administrative Order on Consent ("AOC") is section 1431(a) of the Safe Drinking Water Act ("SDWA" or "the Act"), 42 U.S.C. §300i(a), which authority has been properly delegated to the undersigned EPA program supervisors; and

WHEREAS, EPA believes the groundwater in the contaminated USDW in the East Poplar Oil Field may move, should be monitored, and may warrant additional actions in the future;

NOW THEREFORE, without any admission of fact or law by Respondents Murphy, Pioneer or Samson Hydrocarbons, EPA and these same Respondents hereby agree as follows:

1. This AOC replaces two previously issued Emergency Administrative Orders, bearing docket numbers SDWA-8-99-68 and SDWA-08-2001-33.
2. This AOC is binding upon Murphy, Pioneer, and Samson Hydrocarbons and their successors.

3. While Respondents Murphy, Pioneer and Samson Hydrocarbons do not admit to any matter, factual or legal, by entering into this AOC, said Respondents agree that the requirements of this AOC are specifically enforceable by EPA against them in the United States District Court for the District of Montana or another appropriate forum. In the event EPA brings an action to enforce the requirements of this AOC, Respondents Murphy, Pioneer and Samson Hydrocarbons agree not to dispute the enforceability of the requirements of this AOC or to contest the jurisdiction of the Court to entertain the action or to order appropriate relief, nor will said Respondents challenge EPA's authority to enter into this AOC or to bring such an action.

ADMINISTRATIVE ORDER ON CONSENT (AOC)

4. Respondents Murphy, Pioneer and Samson Hydrocarbons agree to and are hereby ordered, in accordance with Paragraphs 5 through 13 hereof, to (a) construct a drinking water pipeline, (b) monitor dedicated groundwater monitoring wells, (c) monitor private water wells, (d) hold and participate in a public meeting, (e) continue to provide bottled drinking water to identified homesites until the drinking water pipeline delivers drinking water to those homesites, (f) report monitoring information to EPA as it is collected, and (g) submit documents, all as specified below.

AOC Requirement A: Construct Drinking Water Pipeline

5. Respondents Murphy, Pioneer and Samson Hydrocarbons shall construct a drinking water pipeline having the capacity to deliver to the homesites listed in Table 1, at no cost to owners and/or residents at each such homesite, no less than 125 gallons of drinking water per person per day for the number of persons resident at the homesites listed in

Table 1 of this AOC as of the issuance date hereof, the source of which will be the public drinking water system of the City of Poplar, Montana ("Poplar") and which will meet all drinking water standards on the same basis as the drinking water otherwise supplied by Poplar to the residents thereof. The pipeline shall be built following generally accepted engineering standards for drinking water supply pipelines. Respondents Murphy, Pioneer and Samson Hydrocarbons shall be responsible for paying for all water delivered through this pipeline to the current homesite occupants or their successors, until the earlier of five (5) years from the date the pipeline is completed, as defined in Paragraph 7, or the federal Fort Peck Water System has been made available to such homesites. Within 120 days of the issuance date hereof, as defined in Paragraph 28, Respondents Murphy, Pioneer and Samson Hydrocarbons will report in writing to EPA, both by U.S. Mail (certified) and electronic mail, to advise whether a binding agreement between said Respondents and Poplar has been entered pursuant to which Poplar will be the source of drinking water to supply the pipeline. In the event said Respondents advise EPA that such a binding agreement has not been entered with Poplar, then within 45 days thereafter said Respondents shall submit a proposed plan for an alternative means for a permanent supply of a minimum of 125 gallons of drinking water per person per day for the number of persons resident at the homesites listed in Table 1 of this AOC as of the issuance date hereof. In addition, said Respondents shall continue to provide drinking water in accordance with Paragraph 11 hereof.

6. In conjunction with completion of the pipeline required in Paragraph 5 hereof, Respondents Murphy, Pioneer and Samson Hydrocarbons shall make a payment (or

payments totaling) \$5,000.00 to the then current owner(s) of each homesite listed in Table 1 (which may differ from the persons listed in Table 1) and collect certain water samples, all as further described herein and subject to the conditions specified in this Paragraph:

- (a) In advance of the homesites listed in Table 1 being connected to the pipeline, the above-referenced \$5,000.00 payments shall be made to the then-current owner(s) of each homesite, with the intent that such payments will be used to reimburse the homesite owner(s) for the cost of replacing in-house plumbing or pipelines, sinks, faucets, tubs, showers, toilets or other fixtures, appliances (including but not limited to washers and hot water heaters) and any other similar items, such payment to a given homesite owner(s) being contingent upon and in consideration of the homesite owner executing the form of release attached hereto as Exhibit A wherein the then-current homesite owner(s) (i) recognizes and acknowledges that such payment constitutes full and adequate consideration for the release referred to herein, (ii) releases Respondents Murphy, Pioneer and Samson Hydrocarbons from any obligations or responsibilities associated with such items and from any water quality issues related to such plumbing, pipelines, fixtures and appliances, and (iii) holds harmless and indemnifies Respondents Murphy, Pioneer and Samson Hydrocarbons from any claim by the homesite owner(s) or any third party, including EPA, related to such plumbing, pipelines, sinks, faucets, tubs, showers, toilets or other fixtures, appliances (including but not limited to washers and hot water heaters) and any other similar or related items; provided that EPA

has made no findings with respect to the sufficiency of the above-described \$5,000.00 payments for the purposes stated in this Paragraph; and further provided that no such payment is required where a homesite owner to which this Paragraph applies has otherwise received the \$5,000.00 payment described in Paragraph 10 of the May 7, 2002 "Alternative Water System Agreement" entered by the parties in Cary G. Youpee, et al. v. Murphy Exploration & Production Co., et al., No. CV-98-108-BLG-RFC, United States District Court for District of Montana;

- (b) Within 10 days following the date that all homesites listed in Table 1 have been connected to the pipeline, Respondents Murphy, Pioneer and Samson Hydrocarbons shall collect a water sample from each homesite and at least one water sample from the source of drinking water as it enters the pipeline described in Paragraph 5. Samples collected from a given homesite shall be obtained, to the extent possible, from an interior water spigot or as close as possible to the point of human contact (e.g. the kitchen sink, bathroom sink, etc.) and analyzed for the physical properties and chemical constituents listed in Table 3, with all such analyses being provided to EPA and the then-current owner(s) of each homesite within 30 days after receipt by Respondents Murphy, Pioneer or Samson Hydrocarbons, it being intended that the analyses will be used by each then-current homesite owner(s) (with offered assistance from EPA) to determine (i) if any contaminants persist within the homesite's in-house water delivery system

and (ii) which, if any, in-house pipelines or plumbing fixtures should be replaced using the payment referenced in this Paragraph;

- (c) Contemporaneous with the payments and releases described in Subparagraph (a), Respondents Murphy, Pioneer and Samson Hydrocarbons will inform the then-current homesite owner(s) of the sampling required thereafter under Subparagraph (b) and the intended use of the resulting analyses of the samples; and
- (d) Compliance with the terms of this Paragraph by Respondents Murphy, Pioneer and Samson Hydrocarbons shall constitute compliance with this AOC's requirements concerning in-house plumbing or pipelines, sinks, faucets, tubs, showers, toilets or other fixtures, appliances (including but not limited to washers and hot water heaters) and any other similar items within the homesites listed in Table 1.

- 7. The pipeline required in this *AOC Requirement A* shall be constructed no later than 270 days after the issuance date of this AOC.

AOC Requirement B: Monitor at Dedicated Groundwater Monitoring Wells

- 8. Respondents Murphy, Pioneer and Samson Hydrocarbons shall monitor for water quality and static water levels at a network of dedicated groundwater monitoring wells. These wells, shown in Table 2, shall each be monitored by Respondents Murphy, Pioneer and Samson Hydrocarbons for eight (8) years after the issuance date of this AOC. Any well shown in Table 2 not constructed by the issuance date of this AOC shall be constructed prior to the first monitoring event. Monitoring shall include measuring the depth to water in each well at a minimum frequency of once each calendar year, collection of water

samples at a minimum frequency of once each calendar year from each well, and analysis of such samples for the physical properties and chemical constituents listed in Table 3.

All sample analysis results shall be submitted to EPA within 30 days after their receipt by Respondents Murphy, Pioneer or Samson Hydrocarbons. The laboratory providing the sample analysis results shall be instructed to simultaneously transmit the original sample analysis results to all said Respondents.

AOC Requirement C: Monitor at Private Water Wells

9. Respondents Murphy, Pioneer and Samson Hydrocarbons shall collect water samples from the homesites listed in Table 4 at a minimum of once each calendar year for eight (8) years after the issuance date of this AOC, provided that the duty to conduct such monitoring is contingent upon said Respondents being granted appropriate access to the subject wells. To the extent possible, the samples shall be collected at the applicable homesite's domestic water supply well or other accessible sampling location that precedes water treatment equipment, if any. Samples collected shall be analyzed for the physical properties and chemical constituents listed in Table 3. Respondents Murphy, Pioneer and Samson Hydrocarbons shall share sample analysis results from each homesite with both EPA and the occupants at each respective homesite within 30 days after their receipt by Respondents Murphy, Pioneer or Samson Hydrocarbons. The laboratory providing the sample analysis results shall be instructed to simultaneously transmit the original sample analysis results to all said Respondents.

AOC Requirement D: Hold Public Meeting

10. Respondents Murphy, Pioneer and Samson Hydrocarbons shall participate together in a public meeting to be held within 180 days after the issuance date of this AOC. The public meeting will take place near the East Poplar Oil Field and will be for the purpose of informing local citizens and governments, and other interested parties, about the work to be conducted in accordance with this AOC, including a detailed description of groundwater conditions in the area, the drinking water pipeline described in *AOC Requirement A*, the groundwater monitoring described in *AOC Requirement B*, and the homesite drinking water monitoring described in *AOC Requirement C*. Respondents Murphy, Pioneer and Samson Hydrocarbons shall be responsible for coordinating, organizing, and advertising the public meeting. Advertising of the meeting shall include notice in the Wotaniin Wowapi and Wolf Point Herald News newspapers, as well as direct mailing to the homesites listed in both Tables 1 and 4.

AOC Requirement E: Bottled Water Delivery

11. Respondents Murphy, Pioneer and Samson Hydrocarbons shall ensure that delivery of bottled drinking water to each homesite listed in Table 1 continues until the later of the date that (a) the drinking water pipeline as described in *AOC Requirement A* is fully constructed and serving each such homesite, or (b) the public meeting described in *AOC Requirement D* has been completed and notice provided by Respondents Murphy, Pioneer or Samson Hydrocarbons, in consultation with EPA, to the occupants of those homesites that future bottled water delivery will cease; provided that in the event that Poplar is not the source of drinking water to serve the pipeline, said Respondents shall

continue to supply bottled water to each homesite listed in Table 1 until the measures necessary to provide another source of drinking water are implemented, as described in Paragraph 5 hereof.

AOC Requirement F: Monitor and Report throughout the East Poplar Oil Field

12. If, for any reason, Murphy, Pioneer or Samson Hydrocarbons samples any existing or future monitoring well completed in the Quaternary deposits aquifer within the East Poplar Oil Field, or within a perimeter extending three miles beyond the boundaries of the East Poplar Oil Field, but not specifically listed in Table 2, the Respondent that conducts such sampling shall submit the analytical results of such sampling to EPA and the remaining Respondents within 30 days after receipt by the Respondent that performed or directed the sampling. This *AOC Requirement F* shall continue for eight (8) years after the issuance date of this AOC.

AOC Requirement G: Document Submission Requirement

13. If during the period that this AOC remains in effect it comes to the attention of Murphy, Pioneer or Samson Hydrocarbons that their respective previous responses to Paragraphs 1(C) through 1(F) of the Emergency Administrative Order ("EAO") of September 30, 1999 in Docket No. SDWA-8-99-68, as amended, which begins on page 11 thereof, and Paragraph 87 of the September 20, 2001 EAO in Docket No. SDWA-08-2001-33, as amended, which begins on page 57 thereof, did not include a document (or documents) described by said Paragraphs 1(C) through 1(F) or 87, and which were in existence at the time of such previous responses, the affected Respondent(s) shall promptly submit any such document(s) to EPA; provided that nothing in this Paragraph is intended to require

any of said Respondents to conduct an additional examination of their respective records if the examination of their records necessary for compliance with the aforementioned Paragraphs 1(C) through 1(F) and 87 has been previously completed.

DISMISSAL OF EXISTING PETITIONS FOR REVIEW

14. Within ten (10) business days after the issuance date of this AOC, Respondents Murphy and Samson Hydrocarbons shall move to dismiss with prejudice all existing Petitions for Review of the previously issued SDWA Emergency Administrative Orders, bearing docket numbers SDWA-8-99-68 and SDWA-08-2001-33.

FORCE MAJEURE

15. Respondents Murphy, Pioneer and Samson Hydrocarbons shall perform the actions required of them under this AOC within the time limits set forth in this AOC, unless the performance is prevented or delayed solely by events which constitute a Force Majeure event. A Force Majeure event is defined as any event arising from causes beyond the control of Respondents Murphy, Pioneer and Samson, including their employees, agents, consultants and contractors, which could not be overcome by due diligence and which delays or prevents the performance of an action required of them in this AOC within the specified time period. A Force Majeure event does not include, inter alia, increased costs of performance, changed economic circumstances, changed labor relations, normal climatic conditions, or failure to obtain federal, state or local permits if such failure is due to unjustified delay or negligence on the part of said Respondents. When circumstances are occurring or have occurred which may delay the completion of any requirement of this AOC whether or not due to a Force Majeure event, said Respondents shall so notify

EPA in writing within fifteen (15) days after Respondents learn, or in the exercise of reasonable diligence under the circumstances should have learned, of the delay or anticipated delay. The notice shall describe in detail the basis for said Respondents' contention that they experienced a Force Majeure delay, the anticipated length of the delay, the precise cause or causes of the delay, the measures taken or to be taken to prevent or minimize the delay, and the timetable by which those measures will be implemented. Failure to so notify EPA shall constitute a waiver of any claim of Force Majeure as to the event in question. If EPA finds that a delay in performance is, or was, caused by a Force Majeure event, it shall extend the time for performance in writing for a period to compensate for the delay resulting from such event and EPA will not seek imposition of any penalty for such period. In any proceeding regarding a dispute with respect to delay in performance, Respondents Murphy, Pioneer and Samson Hydrocarbons shall have the burden of proving that the delay is, or was, caused by a Force Majeure event, and that the additional time requested is necessary to compensate for that event.

GENERAL PROVISIONS

16. All deadlines in this AOC specified as days before or after a certain event or requirement are defined as calendar days, unless otherwise stated.
17. Unless otherwise stated, all reports and notifications herein required, or otherwise distributed among the parties in connection with this AOC, shall be submitted to the following persons:

For **EPA**:

Nathan Wiser
U.S. Environmental Protection Agency
Office of Enforcement, Compliance
and Environmental Justice
Technical Enforcement Program (8ENF-UFO)
999 18th Street, Suite 300
Denver, Colorado 80202-2466
Telephone (303) 312-6211
Facsimile (303) 312-6409
Email: wiser.nathan@epa.gov

For **Murphy** (principal representative):

Sid Campbell
Murphy Oil USA, Inc.
131 South Robertson Street
New Orleans, Louisiana 70112
Telephone (504) 561-2811
Facsimile (504) 561-2566
Email: sid_campbell@murphyoilcorp.com

With a copy to--

Scott M. DuBoff
Wright & Talisman, P.C.
1200 G Street, N.W. Suite 600
Washington, D.C. 20005-3802
Telephone (202) 393-1200
Facsimile (202) 393-1240
Email: duboff@wrightlaw.com

For **Pioneer** (principal representative)

Pioneer Natural Resources USA, Inc.
Manager, Operation Services
Attn: Wilbur Dover
5205 N. O'Connor Blvd.
Suite 900
Irving, Texas 75039
Telephone (972) 444-9001
Facsimile (972) 969-3588
Email: doverw@pioneernc.com

With a copy to—
Pioneer Natural Resources USA, Inc.
Office of General Counsel
Attn: Marc Skeen
5205 N. O'Connor Blvd.
Suite 900
Irving, Texas 75039
Telephone (972) 444-9001
Facsimile (972) 969-3577
Email: skeenm@pioneernc.com

For **Samson Hydrocarbons** (principal representative)
Mark S. Dalton
The Samson Companies
Two West Second Street
Tulsa, OK 74103
Telephone (918) 591-1369
Facsimile (918) 591-7369
Email: mdalton@samson.com

With a copy to—
Elizabeth E. Mack
Locke Liddell & Sapp
2200 Ross Avenue, Suite 2200
Dallas, TX 75201
Telephone (214) 740-8598
Facsimile (214) 756-8598
Email: emack@lockeliddell.com

18. The provisions of this AOC shall apply to and be binding upon Respondents Murphy, Pioneer and Samson Hydrocarbons, their officers, contractors, directors, agents, successors and assigns. Each Respondent shall give notice of this AOC to any successor in interest prior to such Respondent's transfer of any oil and gas facilities within the East Poplar Unit. Action or inaction of any persons, firms, contractors, employees, agents, or corporations acting under, through or for Respondents Murphy, Pioneer or Samson Hydrocarbons, shall not excuse any failure of Respondents Murphy, Pioneer or Samson Hydrocarbons to fully perform their obligations under this AOC.

19. Other than the provisions in Paragraph 6 of this AOC, nothing in this AOC shall be construed to create any rights in, or grant any cause of action to, any person not a Party to this AOC.
20. By consenting to this AOC, Respondents Murphy, Pioneer and Samson Hydrocarbons agree not to challenge the terms of this AOC in any U.S. Court of Appeals or any other forum.
21. EPA does not waive its authority to seek injunctive relief, costs, interest, and any appropriate penalty associated with any failure by Respondents Murphy, Pioneer or Samson Hydrocarbons to comply with the terms of this AOC.
22. This AOC does not constitute a waiver, suspension, or modification of the requirements of any federal or state statute, regulation, or condition of any permit issued thereunder, including the requirements of the SDWA, which remain in full force and effect. Issuance of this AOC is not a waiver by EPA of its authority to initiate any additional administrative, civil, or criminal action(s) otherwise authorized under the SDWA.
23. Violation of any term of this AOC may subject Respondents Murphy, Pioneer and/or Samson Hydrocarbons to an administrative civil penalty of up to \$16,500 for each day in which such violation occurs or failure to comply continues, pursuant to §1431(b) of the Act, 42 U.S.C. §300i(b). In addition, actions or omissions that violate requirements of the SDWA or its implementing regulations may subject Respondents Murphy, Pioneer and/or Samson Hydrocarbons to a civil penalty of not more than \$32,500 per day per violation pursuant to §1423 of the Act, 42 U.S.C. §300h-2.
24. For a period of 60 days that begins upon the issuance date of this AOC by EPA and each

of the Respondents, EPA may elect, in its sole discretion, to withdraw from the terms hereof by providing notice, by facsimile and certified mail, to the representatives of the Respondents identified in Paragraph 17, in which case this AOC will be null and void. In the absence of such notice within the specified period, this AOC is a final agency action by EPA. In the event this AOC becomes null and void by operation of this Paragraph, Respondents will not rely upon this AOC in any manner in any subsequent administrative or judicial proceedings.

25. Respondents Murphy, Pioneer and Samson Hydrocarbons are jointly and severally responsible for *AOC Requirements A* through *G* contained in Paragraphs 5 through 13 of this AOC.
26. EPA and Respondents Murphy, Pioneer and Samson Hydrocarbons agree to bear their own costs and attorneys fees in connection with this matter, including all administrative and judicial proceedings to date.

ISSUANCE PROCEDURES FOR THIS AOC

27. Each Respondent shall sign its designated signature page in this AOC and, on the same day or the next business day, transmit the original of said signed signature page to EPA to collect all signature pages for incorporation into a single, final document for filing with the Region 8 Hearing Clerk.
28. The issuance date of this AOC shall be the date a fully executed, file-stamped copy is filed with the Region 8 Hearing Clerk.
29. EPA shall mail a copy of the file-stamped AOC to each Respondent using Certified U.S. Mail on the date of filing or on the next business day.

30. EPA shall telephone and email each of the parties in Paragraph 17 on the day the AOC is file-stamped, informing each party of this AOC's issuance date.
31. Each of the undersigned representatives of the parties to this AOC certifies that he or she is fully authorized by the party represented to execute and legally bind the party to the terms and conditions of this AOC.

Signed this 20th day of July, 2004.

Elisabeth Evans

Elisabeth Evans, Director
Technical Enforcement Program
Office of Enforcement, Compliance,
and Environmental Justice
United States Environmental Protection Agency, Region 8

Michael T. Resnick for

David J. Janik, Supervisory Attorney
Legal Enforcement Program
Office of Enforcement, Compliance,
and Environmental Justice
United States Environmental Protection Agency, Region 8

MURPHY EXPLORATION & PRODUCTION COMPANY

Date: June 2, 2004

By: 

Scott M. DuBoff

Title: Legal Counsel for Murphy Exploration & Production Company
c/o Wright & Talisman, P.C.
1200 G Street, N.W., Suite 600
Washington, D.C. 20005-3802

PIONEER NATURAL RESOURCES USA, INC.

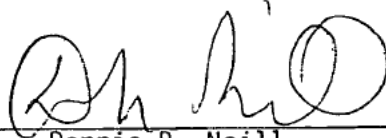
Date: May 27, 2004 By:  MARK L. WITHROW

Title: EXECUTIVE VICE-PRESIDENT

SAMSON HYDROCARBONS COMPANY

Date: May 27, 2004

By:

A handwritten signature in black ink, appearing to read "Dennis R. Neill", written over a horizontal line.

Dennis R. Neill

Title: President

TABLE 1

List of private homesites that shall have a drinking water pipeline constructed and connected for the purpose of delivering all drinking water needs (as per Paragraph 5)

Current Resident	City	State	Residence Address	Sec	Twp	Rge
Abbott, Joe	Poplar	MT				
Kim, Audrey	Poplar	MT				
Kim, Michael	Poplar	MT				
Gray Hawk, Rachel	Poplar	MT				
Trottier, Tim & Donna	Poplar	MT				
Lockman, Lyle	Poplar	MT				
Four Bears, Charles	Poplar	MT				
Martell, Rene & Josi	Poplar	MT				
Ricker Sr., George & Helen	Poplar	MT				
Bleazard, Ross & Laura	Poplar	MT				
Whitmer, Warren & Donna	Poplar	MT				
Loegering, Mavis	Poplar	MT				
Kim Sr., Jesse	Poplar	MT				
Grandchamp, Denise	Poplar	MT				
Grainger, Trivian	Poplar	MT				

TABLE 2

List of dedicated groundwater monitoring wells to be monitored for the purpose of detecting oil field contamination movement

Well Name	Status	Location			
		Township	Range	Section	Qtr/Qtr
LAW - M01	Active	28 North	51 East	33	NE/NE
LAW - M03	Active	28 North	51 East	28	SW/NW
LAW - M04	Active	28 North	51 East	29	NW/SE
LAW - M05	Active	28 North	51 East	33	NW/SW
LAW - M06	Active	28 North	51 East	31	SE/SE
LAW - M07	Active	28 North	51 East	30	SW/SE
LAW - M08	To be constructed	28 North	51 East	31	SE/SE
LAW - M09	To be constructed	27 North	51 East	5	NE/NW
PNR27	Active	28 North	51 East	28	NE/SE
PNR28	Active	28 North	51 East	28	NW/SE

PNR29	Active	28 North	51 East	28	SW/SE
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TABLE 3

Physical and chemical analysis requirements for samples collected from dedicated groundwater monitoring wells and private homesites

Analyte Parameter	Method Detection Limit	Units
Static water level	0.1	foot
pH	0.1	pH unit
TDS	10	mg/l
Cl	10	mg/l
Na	10	mg/l
Mg	10	mg/l
K	10	mg/l
CO ₃	10	mg/l
HCO ₃	10	mg/l
SO ₄	10	mg/l
Ca	10	mg/l
Benzene	0.05	mg/l
Toluene	0.05	mg/l
Ethylbenzene	0.05	mg/l
Total xylenes	0.05	mg/l

TABLE 4

List of private homesites that shall have drinking water samples collected for the purpose of detecting groundwater contamination

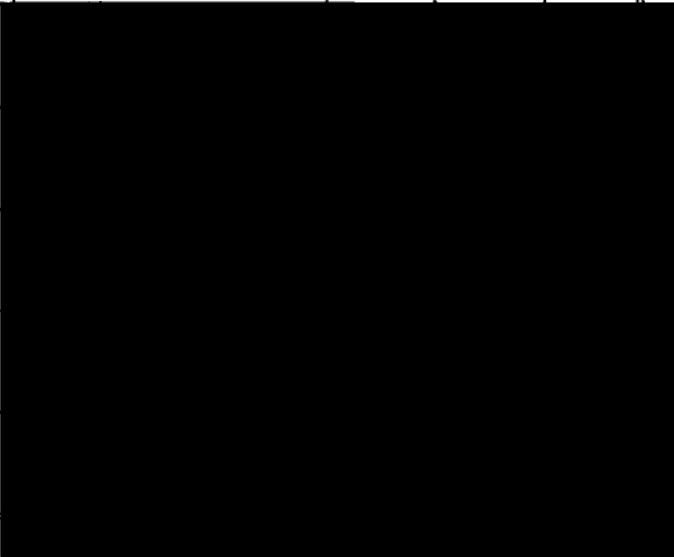
Current Resident	City	State	Residence Address	Sec	Twp	Rge
Kohl, Danny	Poplar	MT				
Lien, Birdell	Poplar	MT				
Zimmerman, Bill	Poplar	MT				
Grainger, Iva	Poplar	MT				
Ranf, Marie and Come, Warren	Poplar	MT				

EXHIBIT A - RELEASE

WHEREAS an Administrative Order on Consent (AOC) entered by Region 8 of the United States Environmental Protection Agency on _____, 2004 in Docket No. SDWA-08-2004-_____ requires Pioneer Natural Resources USA, Inc., Murphy Exploration & Production Company, and Samson Hydrocarbons Company (hereinafter referred to collectively as the Companies) to arrange for the construction and operation of a pipeline to transport potable water to the residence of [insert name of Homeowner(s)] in Poplar, Montana (hereinafter [collectively] referred to herein as Homeowner[s]);

WHEREAS, the AOC also requires the Companies to pay the Homeowner[s] the sum of Five Thousand Dollars (\$5,000.00) (preferably prior to connection of the Homeowner[s] [] residence to the above-referenced pipeline) for intended use by the Homeowner[s] to replace in-house plumbing or pipelines, sinks, faucets, tubs, showers, toilets or other fixtures, appliances (including, but not limited to, washers and hot water heaters) and any other similar items as determined by the Homeowner[s], such payment requirement being contingent upon Homeowner[s] [] agreement to release and hold harmless and indemnify the Companies as set forth herein;

NOW, THEREFORE, for good and valuable consideration, the Homeowner[s] hereby:

1. Acknowledge[s] the receipt and adequacy of the \$5,000.00 payment as consideration for this Release and in exchange for payment of such sum, fully and forever release[s] and discharge[s] the Companies, individually and collectively, and the insurers, agents, directors, officers, employees, representatives, administrators, parent companies, affiliates, successors and

assigns of each Company, of and from any and all actions, claims, causes of action, demands, or expenses, of whatever nature and kind, in law or in equity, whether asserted or unasserted, known or unknown, foreseen or unforeseen, on account of or in any way related to or associated with any in-house plumbing or pipelines, sinks, faucets, tubs, showers, toilets or other fixtures, appliances (including, but not limited to, washers and hot water heaters) or any other in-house items of a similar nature or type, including any water quality issues related to such in-house plumbing, etc., it being the intent of the parties hereto to fully compromise and settle all such claims; and

2. Hold[s] harmless and indemnify[ies] the Companies, individually and collectively, from any claims by any other party including, but not limited to, the United States Environmental Protection Agency, related to or associated with any in-house plumbing or pipelines, sinks, faucets, tubs, showers, toilets or other fixtures, appliances (including, but not limited to, washers and hot water heaters) or any other in-house items of a similar nature or type, including any future claims or demands to replace or repair such plumbing or pipelines, sinks, faucets, tubs, showers, toilets or other fixtures, appliances (including, but not limited to, washers and hot water heaters) or any other in-house items of a similar nature or type.

The Homeowner[s][] release of and duty to hold harmless and indemnify the Companies shall be binding upon Homeowner[s][] heirs, personal representatives, successors, assigns, agents, partners, employees, insurers and attorneys.

In the event that this Release is executed in a representative capacity, the person signing warrants that he or she has the express authority to bind his or her principal to the terms hereof. The Homeowner[s] further represent[s] and warrant[s] that no other person or entity has or had any interest in the potential claims, demands, obligations or causes of action referred to in this Release

and that the parties executing the Release have the sole right and exclusive authority to do so and to receive the sum specified herein.

This Release shall be construed and enforced in accordance with the laws of the State of Montana and shall be interpreted without application of, reliance upon, or respect to any doctrine, the import of which is or would be to interpret this document in favor of a non-drafting party or against the interests of a drafting party.

The Homeowner[s] expressly acknowledge[s] that payment of the above-mentioned \$5,000.00 sum shall not be considered as an admission of liability on the part of any of the Companies, each of whom expressly deny any such liability.

The Homeowner[s] state[s] that [he/she/they] [have/has] carefully read the foregoing Release, understand[s] the contents thereof, discussed its legal effect with [his/her/their] attorney and sign[s] the same of [his/her/their] own free will and accord, intending to be legally bound thereby.

DATED this _____ day of _____, 2004.

CAUTION: READ BEFORE SIGNING

[insert name of Homeowner]

STATE OF MONTANA)
) ss:
County of _____)

This instrument was acknowledged before me on _____, 2004, by [insert name of Homeowner].

[Signature of Notary]

[Printed Name of Notary]

Notary Public for the State of Montana
Residing _____ at

My _____ [City of Residence] commission expires:

(NOTARIAL SEAL) 20____
Year]

[Month Day

[insert name of Homeowner]

STATE OF MONTANA)
County of _____) ss:

This instrument was acknowledged before me on _____, 2004, by
[insert name of Homeowner].

[Signature of Notary]

[Printed Name of Notary]

Notary Public for the State of Montana
Residing _____ at

My _____ [City of Residence] commission expires:


(NOTARIAL SEAL) 20____

[Month Day Year]

MURPHY EXPLORATION & PRODUCTION COMPANY

Date: June 2, 2004

By:


Scott M. DuBoff

Title: Legal Counsel for Murphy Exploration & Production Company
c/o Wright & Talisman, P.C.
1200 G Street, N.W., Suite 600
Washington, D.C. 20005-3802

PIONEER NATURAL RESOURCES USA, INC.

Date: MAY 27, 2004

By:


Mark L. Withrow
MARK L. WITHROW

Title: EXECUTIVE VICE-PRESIDENT

SAMSON HYDROCARBONS COMPANY

Date: May 27, 2004

By:

A handwritten signature in blue ink, appearing to read "Dennis R. Neill", written over a horizontal line.

Dennis R. Neill

Title: President



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466
Phone 800-227-8917
<http://www.epa.gov/region08>

Ref: 8ENF-UFO

JUL 20 2004

CERTIFIED MAIL and EMAIL
RETURN RECEIPT REQUESTED

Sid Campbell
Murphy Oil USA Inc.
131 S. Robertson St.
New Orleans, LA 70112

Marc Skeen
Pioneer Natural Resources USA, Inc.
5202 N. O'Connor Blvd., Suite 900
Irving, TX 75039

Scott DuBoff
Wright & Talisman, P.C.
1200 G Street, N.W. Suite 600
Washington, D.C. 20005-3802

Mark Dalton
The Samson Companies
Two West Second Street
Tulsa, OK 74103

Wilbur Dover
Pioneer Natural Resources USA, Inc.
5202 N. O'Connor Blvd., Suite 900
Irving, TX 75039

Elizabeth Mack
Locke, Liddell & Sapp
2200 Ross Avenue, Suite 2200
Dallas, TX 75201

Re: Fort Peck East Poplar Oil Field
Safe Drinking Water Act Emergency Administrative
Order on Consent Docket No. **SDWA-08-2004-0035**

Dear Respondents in the above-referenced matter:

Enclosed, please find your copy of the final Safe Drinking Water Act Emergency Administrative Order on Consent (AOC). This AOC's effective date is July 20, 2004. If you should have any questions about this matter, please feel free to contact Nathan Wiser of my staff, at (303) 312-6211, or Jim Eppers, Attorney, at (303) 312-6893.

Sincerely,

Elizabeth Evans

Elisabeth Evans
Director
Technical Enforcement Program

Enclosure

cc: Deb Madison, Manager, Office of Environmental Programs
Fort Peck Tribes (w/Enclosure)



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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466
Phone 800-227-8917
<http://www.epa.gov/region08>

Ref: 8ENF-UFO

CONCURRENCE COPY

CERTIFIED MAIL and EMAIL
RETURN RECEIPT REQUESTED

JUL 20 2004

Sid Campbell
Murphy Oil USA Inc.
131 S. Robertson St.
New Orleans, LA 70112

Marc Skeen
Pioneer Natural Resources USA, Inc.
5202 N. O'Connor Blvd., Suite 900
Irving, TX 75039

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5202 N. O'Connor Blvd., Suite 900
Irving, TX 75039

Elizabeth Mack
Locke, Liddell & Sapp
2200 Ross Avenue, Suite 2200
Dallas, TX 75201

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Safe Drinking Water Act Emergency Administrative
Order on Consent Docket No.

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Sincerely,

Elisabeth Evans
Director
Technical Enforcement Program

Enclosure

cc: Deb Madison, Manager, Office of Environmental Programs
Fort Peck Tribes (w/Enclosure)

8ENF-UFO
N. Wiser
7-20-04

8RC
S. Moore
7/20/04

8ENF-L
B. Wiser
7/20/04

8 enf-ufp
evans
7/20/04



Printed on Recycled Paper

bcc: Dave Carson, Attorney (w/Enclosure)
Department of Justice

Barbara Burkland 8MO (w/Enclosure)

Connally Mears 8P-TA (w/Enclosure)

Steven Moores 8RC (w/Enclosure)

Jim Eppers 8ENF-L (w/Enclosure)

Alan Morrissey, EPA HQ Mail Code 2243A (w/Enclosure)

Richard Witt, EPA HQ Mail Code 2355A (w/Enclosure)

East Poplar Oilfield Area Water Pipeline & Groundwater Monitoring Study

Prepared by:
Land & Water Consulting

Participating Companies:
Murphy Exploration & Production
Samson Hydrocarbons
Pioneer Natural Resources

Purpose of Meeting

- Explain Groundwater Conditions
- Construction of Water Pipeline
- Future monitoring of groundwater and water supply

Groundwater Monitoring Study

- Identified the leading edge of saline plume
- Examined seasonal water quality changes
- Determine aquifer characteristics

Groundwater/Aquifer Characteristics

- Groundwater surface data
 - Little fluctuation seasonally
 - Indicates groundwater flows southwest from the Oilfield
- Groundwater velocity
 - Aquifer tests show average velocity is 0.4 ft/day

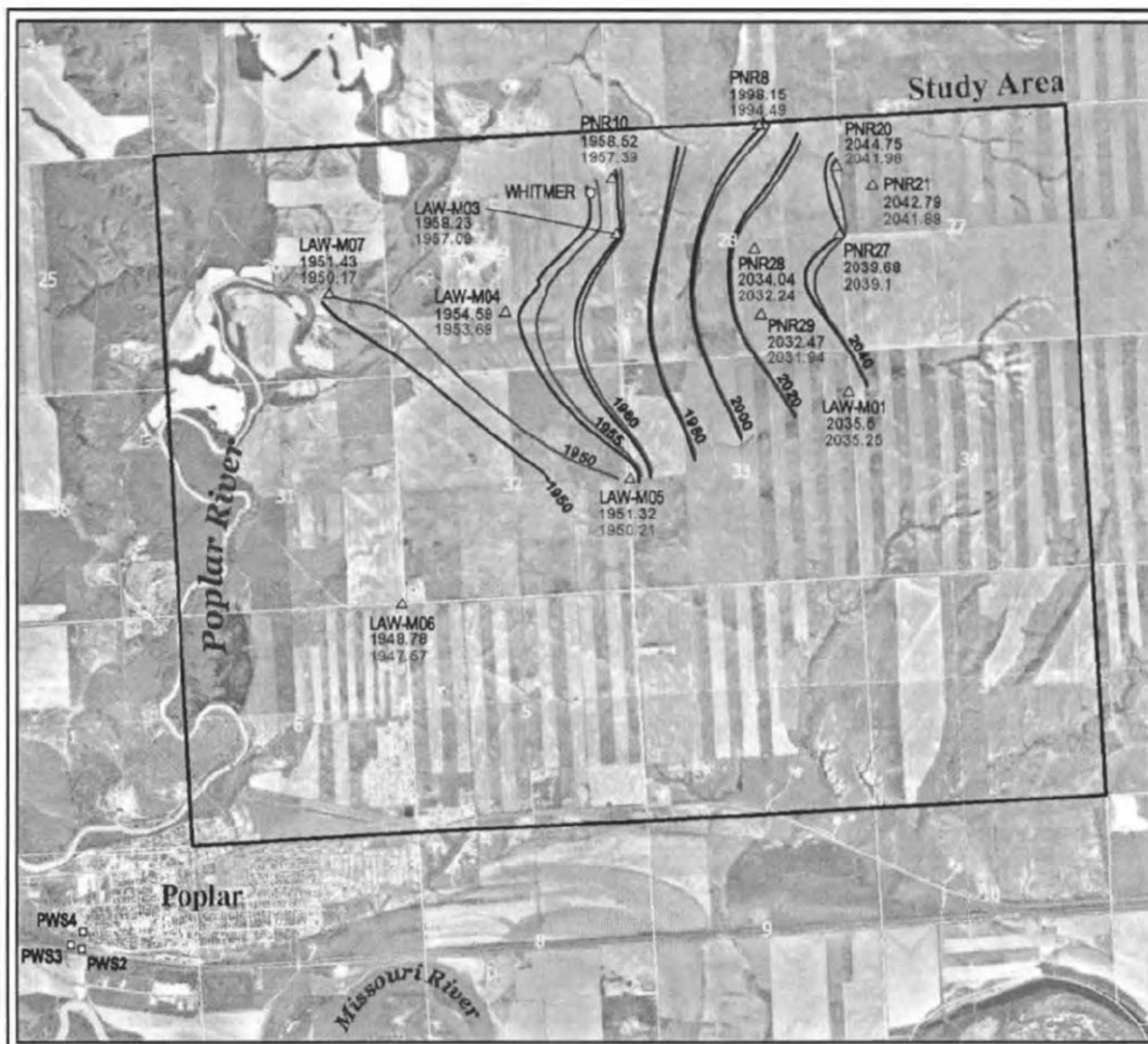


Figure 2.

LEGEND

Monitoring Wells

△ **LAW-M0x**
Monitoring well installed by
Land & Water

△ **PNR**
Monitoring well established by
Pioneer Natural Resources

Domestic Wells

○ Existing supply well with
designation established by
name of property owner.

Public Water Supply Wells

□ Public Water Supply Well
for City of Poplar

Groundwater Levels

△ **Well #**
May 2003 Groundwater Elevation
November 2003 Groundwater Elevation

Groundwater Contours

May 2003

November 2003

**Figure 2. May 2003, November 2003
Groundwater Elevations and Contours**

LAND & WATER CONSULTING, INC.
P.O. Box 1114
1124 E. Main Street
Missouri, MO 64501
Tel: 417-731-4004
Fax: 417-731-4007
info@landwaterinc.com

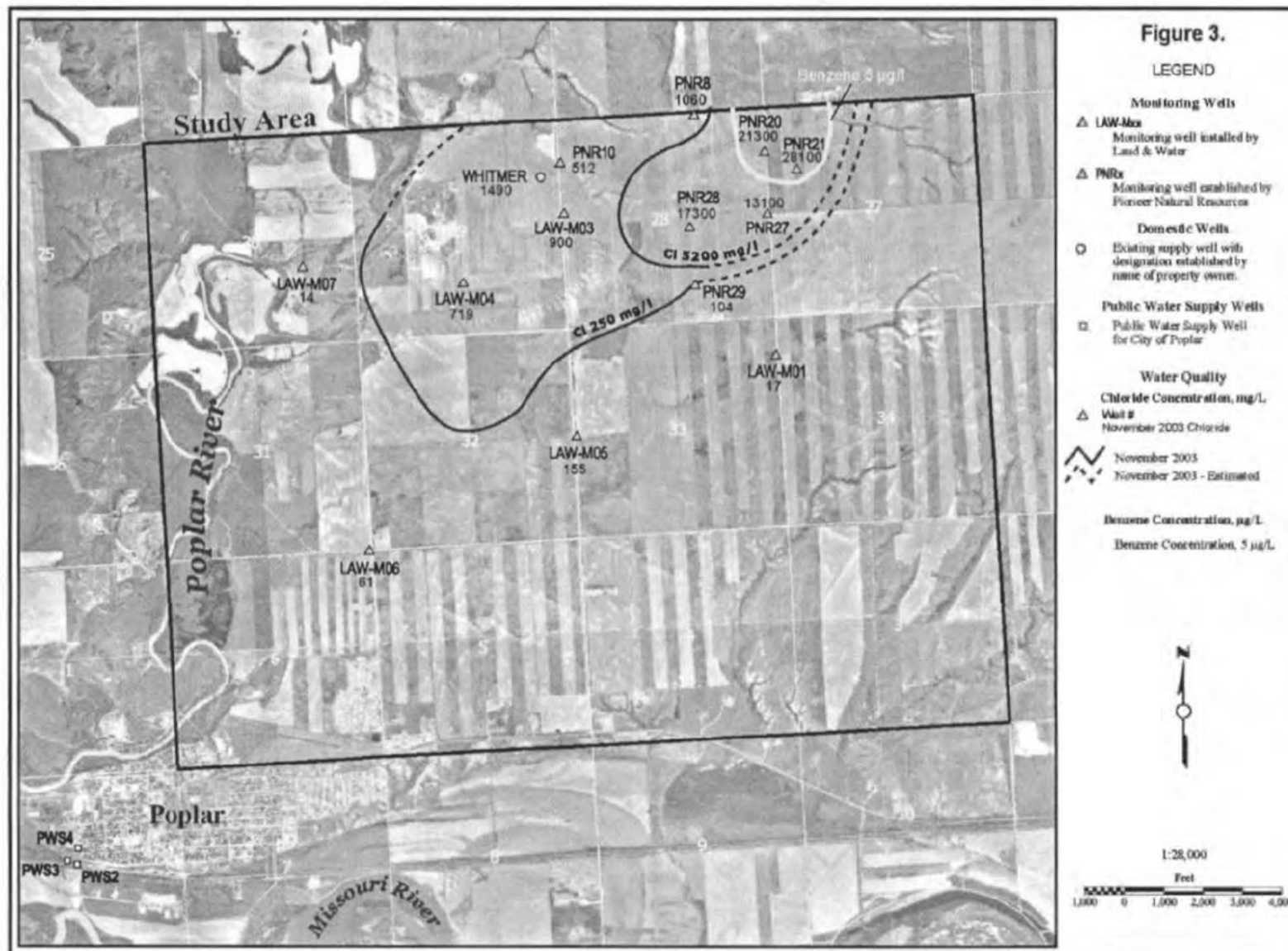
Project: 110305
Date: February 2004
Location: Poplar, MT
Project Manager: T. Monette
Drawn By: JCG
File: 110305-Figure 2.mxd

Federal Drinking Water Standards

- Primary Drinking Water Standards
 - Health concerns
- Secondary Drinking Water Standards
 - Taste, odor, staining etc.

Water Quality Standards

- Chloride
 - Secondary drinking water standard 250 ppm
- Total Dissolved Solids
 - Secondary drinking water standards 500 ppm
- Benzene
 - Primary drinking water standards 5 ppb



LAND & WATER CONSULTING, INC.
 14440 22nd Street
 P.O. Box 100
 55000-0100
 Minneapolis, MN 55410
 Tel: 612-338-8000
 Fax: 612-338-8001
 www.lwconsulting.com

Figure 3. Extent of Impacted Groundwater

Project: 110005
 Date: February 2004
 Location: FWSM MT
 Project Manager: T. Mancini
 Drawn By: JCC
 Date: 02/05/04

Domestic Well Replacement Project

- Purpose of Pipeline
- History of Pipeline Development
- Location of Pipeline
- Additional Issues Related to the Pipeline

Project Purpose

- Supply drinking water to 15 home sites
- EPA requires supplying water for 5 years or until the federal Fort Peck Water System is available.
- Companies agreed in a settlement to supply water for 10 years or until the federal Fort Peck Water System is in place.

Pipeline Development History

- November 2001 –Companies prepared a feasibility report of options to provide water to homes northeast of Poplar.
- December 2001 –Companies install cisterns to replace domestic water supplies at three homes. Receive approval from EPA for concept of design and construction of a pipeline.
- 2001- Present –Companies design pipeline, receive EPA and DEQ approval, obtain right-of-way and easements.

Proposed Pipeline Location

Additional Pipeline Items

Upon completion of pipeline, Companies will:

- Make a \$5,000 payment to the owner of each home site for replacement of in-house plumbing if they have not already been paid.
- Collect a water sample from each home site and the source of drinking water.
- Collect water samples from 5 private wells once each year for eight years.

QUESTIONS?



LAND & WATER CONSULTING, INC.

1120 Cedar Street • P.O. Box 8254 • Missoula, Montana 59807 • Tel (406) 721-0354
E-mail info@landandwater.net • Fax (406) 721-0355

RECEIVED

MAY 3 - 2004

Office of Enforcement
Compliance & Environmental
Justice

April 28, 2004

Sid Campbell
Murphy Exploration and Production Co.
P.O. Box 61780
New Orleans, LA 70161-1780

Wilbur Dover
Pioneer Natural Resources USA Inc.
1400 Williams Square West
5202 North O'Connor Blvd.
Irving, Texas 75039-3746

Mark Dalton
Samson Hydrocarbons Company
Two West 2nd Street
Samson Plaza
Tulsa, OK 74103-3103

COPY

**RE: PUBLIC WATER SUPPLY WELL THREAT STUDY 2003 REPORT
EAST POPLAR OIL FIELD**

Dear Technical Committee,

Enclosed you will find the *Public Water Supply Well Threat Study 2003 Report* for the East Poplar Oil Field. Pursuant to US Environmental Protection Agency Region 8 Emergency Administrative Order Document No. SDWA-08-2001-33 this report presents the results of water samples collected for four quarterly monitoring events in 2003. It follows a study of the possible threat to the City of Poplar's public water supply wells and domestic supply wells posed by saline groundwater identified in the area known as the East Poplar Oil Field (EPOF).

As directed by the Technical Committee, two (2) copies of the study have been mailed to each of the members of the Technical Committee addressed above, and one (1) copy has been mailed to Nathan Wiser of the U.S. Environmental Protection Agency. Additionally, one (1) copy each has been mailed to;

- Deb Madison, Fort Peck Environmental Program Manager;
- Kevin Buckles, Mayor of Poplar;
- Charles Feast, Feast Geosciences, LLC; and
- Tom Osborne, Hydro Solutions, Inc.

Thank you for the opportunity to assist the companies with this project. Please feel free to contact me or the Project Manager Charlie Vandam at (406) 721-0354 or troy.monroe@landandwater.net with any questions or comments.

Sincerely,



Troy Monroe

Engineer

Land & Water Consulting, Inc.

Enclosure: PWS Well Threat Study – East Poplar Oil Field 2003 Report

Copy: Nathan Wiser, U.S. Environmental Protection Agency
Deb Madison, Fort Peck Environmental Program Manager
Kevin Buckles, Mayor of Poplar
Charles Feast, Feast Geosciences, LLC
Tom Osborne, Hydro Solutions, Inc.

2003 WATER QUALITY REPORT PWS WELL THREAT STUDY

FINAL

April 28, 2004

COPY

Prepared for:

SID CAMPBELL
MURPHY EXPLORATION AND PRODUCTION CO.
P.O. Box 61780
New Orleans, LA 70161-1780

WILBUR DOVER
PIONEER NATURAL RESOURCES USA INC.
1400 Williams Square West
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SAMSON HYDROCARBONS COMPANY
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Prepared by:

LAND & WATER CONSULTING, INC.
P. O. Box 8254
Missoula, MT 59807

Project # 110396



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1.0 INTRODUCTION

This Public Water Supply (PWS) Well Threat Study 2003 Report was completed in fulfillment of requirements specified in US Environmental Protection Agency Region 8 Emergency Administrative Order Document No. SDWA-08-2001-33 (USEPA, 2001a), which was issued on September 20, 2001, and the First Amended Order (USEPA, 2001b) which was issued on October 3, 2001. This report presents the results of water samples collected for four quarterly monitoring events in 2003. It follows a study of the potential threat to the City of Poplar's public water supply wells and domestic supply wells posed by saline groundwater identified in the area known as the East Poplar Oil Field (EPOF). Land and Water Consulting, Inc. was retained by Marathon Oil Company, Murphy Exploration and Production Company (Murphy), Pioneer Natural Resources USA, Inc. (Pioneer), and Samson Hydrocarbons Company (collectively referred to as "The Companies") to conduct the study and prepare this report.

The study area addressed by the Administrative Order SDWA-08-2001-33 is specified as a rectangular area defined in the north by Sections 30 and 27 in Township 28 North, Range 51 East; and in the south by Sections 6 and 3 in Township 27 North, Range 51 East; on the Fort Peck Indian Reservation in Roosevelt County, Montana (**Figure 1**). The City of Poplar lies adjacent to the southwest corner of the study area. This definition of the study area does not include the northern portion of the oil field.

Drinking water in the study area is derived primarily from shallow Quaternary sediments. Water quality in portions of these sediments has been degraded by various dissolved solids, mainly chloride, and to a very limited areal extent by petroleum hydrocarbons. The water quality degradation has been attributed to brine (water with solids concentration greater than 35,000 mg/L) generated as a by product of oil production, which has resulted in an area of impacted groundwater, referred to as the saline groundwater plume. The impacted groundwater has impaired the use of several domestic wells, which is addressed in the first task in the Order. One of the goals of this study was to determine whether or not impacted groundwater could be migrating toward the City of Poplar's PWS wells.

The first year of the study delineated the leading edge of the saline groundwater plume and estimated the direction and rate of migration of the plume edge (Land & Water 2003). Subsequent years of the study are dedicated to the monitoring of the saline groundwater plume and the reevaluation of migration routes and rate. This report evaluates the second year of the study, the first year of quarterly monitoring.

1.1 Scope of Work

The tasks completed for the second year of the study include the following:

1. Measuring water levels in the network wells on a quarterly basis.
2. Quarterly groundwater quality sampling of the network wells.
3. Completion of this report.

A summary of the wells referenced in this report is included as **Table 1-1**. For each well the number of data points and date range for the water level and water quality data are listed, along with the well depth if known. All monitoring network wells are located on **Figure 1** along with other Pioneer and domestic wells mentioned in this report.

The date range for the water level data used in this report is from mid 2001 through 2003 and for water quality data from mid 2000 through 2002. Pioneer shared water level and water quality data measured in their wells and in some domestic wells for this study. This report summarizes the activities performed in 2003 and the changes in water levels and water quality during the four quarterly sampling events that occurred in 2003. Historic data collected during this and previous investigations are shown in **Appendix A**.

Table 1-1 *Wells Referenced in This Report*

Well	Total Depth (ft bgs)	Water Level Measurements			Water Quality Sampling		
		Pts	Start	End	Pts	Start	End
Monitoring Network Wells							
LAWM01	61	8	Sep 02	Nov 03	6	Sep 02	Nov 03
LAWM03	65	6	Dec 02	Nov 03	5	Nov 02	Nov 03
LAWM04	69	6	Dec 02	Nov 03	5	Nov 02	Nov 03
LAWM05	135	6	Dec 02	Nov 03	5	Nov 02	Nov 03
LAWM06	133	6	Dec 02	Nov 03	5	Nov 02	Nov 03
LAWM07	49	6	Dec 02	Nov 03	5	Dec 02	Nov 03
PNR27	66	12	Apr 02	Nov 03	11	Aug 01	Nov 03
PNR28	62	10	May 02	Nov 03	11	Aug 01	Nov 03
PNR29	54	10	May 02	Nov 03	11	Aug 01	Nov 03
Other Wells Within the Study Area							
PNR8		11	May 02	Nov 03	11	May 00	Nov 03
PNR10		12	Apr 02	Nov 03	12	Jun 00	Nov 03
PNR20		12	Apr 02	Nov 03	11	Aug 01	Nov 03
PNR21		12	Apr 02	Nov 03	11	Aug 01	Nov 03
Whitmer		8	May 02	Nov 03	16	May 00	Nov 03

2.0 BACKGROUND

A description of the study area was presented in the *Public Water Supply Well Threat Study* report (Land & Water, 2003). Included was a brief summary of the geology and hydrogeology, followed by a summary of previous investigations. Greater detail regarding the study area can be found in that report and the references cited.

3.0 FIELD WORK

Field work was designed to monitor the nature and extent of saline groundwater in the study area, and to provide data for delineation of the leading edge of the saline groundwater plume. This section presents a discussion of the field task completed for this study.

3.1 Groundwater Data Collection

The task completed in 2003 was dedicated to collecting quarterly groundwater data comprised of groundwater elevations and water quality sampling. A monitoring network was established to monitor changes and migration of the saline groundwater plume. The network consists of nine monitoring wells, three of which were previously installed by HKM Engineering for Pioneer (**Figure 1**). The sampling network is designed to monitor water quality along possible flow directions of the saline groundwater plume. Monitoring wells have been installed west from the elevated inorganic levels in sections 27 and 28 towards the Poplar River (PNR 27, PNR 28, LAW-M03, LAW-M04 and LAW-M07), in a southerly direction along the groundwater contour (PNR 27, LAW-M01) and in a line-of-sight southwest diagonal towards the City of Poplar (PNR 27, PNR 29, LAW-M05 and LAW-M06).

3.1.1 Groundwater Elevations

Groundwater elevations in a total of 14 different monitoring and domestic wells were measured quarterly. Groundwater elevations were measured to the top of the well casing (TOC) using electric static water level tapes. TOC elevations were surveyed to mean sea level. The groundwater elevation data was used to create groundwater potentiometric maps, and to determine the groundwater flow direction and gradient.

3.1.2 Groundwater Quality

Monitoring wells were sampled in accordance with EPA guidelines. Methods included purging three well-bore volumes from the well and constant measurement of temperature, pH and conductivity to insure the collection of representative aquifer samples. Samples were sent to Energy Laboratories in Billings, Montana. The PNR wells were sampled by HKM Engineering, Inc. and results have been shared with Land & Water Consulting, Inc. **Table 3-1** lists the parameters, and the detection limits that are analyzed as part of the PWS Well Threat Study monitoring network.

Table 3-1 *PWS Well Threat Study Analyte List*
(As Specified in EPA Order SDWA-08-2001-33)

Analyte Parameter	Method Detection Limit-Order	Method Detection Limit-Actual	Units
PH	0.1	0.1	standard units
Total Dissolved Solids	10	10	mg/l
Dissolved Chloride	10	1	mg/l
Dissolved Sodium	10	1	mg/l
Dissolved Calcium	10	1	mg/l
Dissolved Potassium	10	1	mg/l
Dissolved Carbonate	10	1	mg/l
Dissolved Bicarbonate	10	10	mg/l
Dissolved Magnesium	10	1	mg/l
Dissolved Sulfate	10	1	mg/l
Benzene	0.05	0.0005	mg/l
Toluene	0.05	0.0005	mg/l
Ethylbenzene	0.05	0.0005	mg/l
Total Xylenes	0.05	0.0005	mg/l

Quarterly groundwater sampling was initiated in November 2002. Quarterly groundwater sampling continued in 2003 with sampling events in February, May, August and in November.

4.0 DATA EVALUATION

4.1 Groundwater Elevations and Flow Direction

Groundwater elevation data collected in 2003 were evaluated for seasonal and spatial variations. The seasonal variations were assessed because they can be associated with water quality changes. Spatial variations were used to develop groundwater contour maps to evaluate flow direction and gradient.

Water levels across the study area appear to display very little seasonal fluctuation, with water levels in most wells varying one foot or less. Variances do occur; two wells, PNR 8 and PNR 20, each had November water levels that were three-feet or more lower than previous events.

A groundwater contour map (potentiometric map) was developed for the May and November 2003 datasets collected for this study (**Figure 2**). This potentiometric map demonstrates little seasonal variations.

The potentiometric surface has two distinct regions, the first includes the river plain and first terrace, and the second includes the upper terraces. Groundwater flow is generally westward toward the Poplar River from the upper terraces at a relatively steep gradient (0.023 ft/ft as measured from PNR 28 to LAW-M03). The groundwater flow changes to

a more southwesterly direction in the river valley, paralleling the river, with a much flatter gradient (0.0009 ft/ft as measured from LAW-M03 to LAW-M06).

4.2 Groundwater Quality

Water quality data for the study area were evaluated, with the primary focus being chloride concentration. Chloride is the primary indicator of the brine plume. The *Public Water Supply Well Threat Study* report (Land & Water, 2003) estimated the boundaries of moderately impacted (chloride concentration >250 mg/l) and severely impacted (chloride concentration >5,200 mg/l) groundwater.

The quality of groundwater is based on a modified version of the water type rating system described by previous USGS studies. The USGS types are based on increasing concentrations of chloride and total dissolved solids (TDS), and range from Type I, or non-impacted groundwater, to Type IV which is actual brine.

For this investigation, the boundary between moderately impacted and non-impacted groundwater within the study area is based on the Secondary Drinking Water Standard for chloride of 250 mg/L (USGS Type II). Further differentiation is made between moderately impacted and severely impacted groundwater using a chloride concentration of 5,200 mg/L as the boundary (USGS Type III). The classification used for this evaluation is restated as follows:

1. Non-impacted: Groundwater with chloride concentration less than 250 mg/L;
2. Moderately Impacted: Groundwater with chloride concentration between 250 mg/L and 5,200 mg/L; and
3. Severely Impacted: Groundwater with chloride concentration greater than 5,200 mg/L.

4.2.1 Distribution of Impacted Groundwater

Water quality data were used to classify groundwater samples from wells within the study area into the different levels of apparent brine impact noted above. The groundwater classification for wells within the study area for which data are available is summarized in **Table 4-1**. Groundwater quality quarterly monitoring is ongoing as pursuant to EPA Emergency Administrative Order (USEPA, 2001a) and this classification will be updated as new data becomes available. All wells retained the same classification in 2003 as was originally designated in the *Public Water Supply Well Threat Study* report (Land & Water, 2003).

Table 4-1 *Water Quality Impact Summary – Study Area Wells*

Well	November 2002 Chloride Concentration (mg/l)	November 2003 Chloride Concentration (mg/l)	Water Quality Classification
LAW-M01*	21	17	Non-impacted
LAW-M03*	696	900	Moderately Impacted
LAW-M04*	615	719	Moderately Impacted
LAW-M05*	106	155	Non-impacted
LAW-M06*	20	61	Non-impacted
LAW-M07*	19 ¹	14	Non-impacted
PNR-8	1,140	1,060	Moderately Impacted
PNR-10	384	512	Moderately Impacted
PNR-20	18,400	21,300	Severely Impacted
PNR-21	28,600	28,100	Severely Impacted
PNR-27*	11,200	13,100	Severely Impacted
PNR-28*	15,700	17,300	Severely Impacted
PNR-29*	117	104	Non-impacted
Whitmer	1,250	1,490	Moderately Impacted

* Wells part of Guardian Network and sampled quarterly. ¹ December 2002 sample.

The groundwater classifications were used to develop a map of the areal extent of impacted groundwater. **Figure 3** shows the November 2003 extent of impacted groundwater. This figure shows that groundwater quality varies greatly within the study area, with a distinctive core area of severely impacted groundwater. Chloride concentrations decrease away from the core area, more rapidly in the upgradient direction, grading into a band of moderately impacted groundwater and then into background or non-impacted groundwater.

The area of greatest brine impact is just south (and side-gradient) of the Biere 1-22 well (located just north of the study area in section 22). In this area, a core of severely impacted groundwater is dominant which extends into the study area encompassing the northeastern portion of section 28 and the northwestern portion of section 27.

The spatial distribution of chloride concentrations does show gradational changes from impacted to non-impacted groundwater. However, the actual plume edge may deviate somewhat from the delineated location, particularly in areas where the distance between data points is great. For this reason, portions of the plume boundary are shown as dashed lines on **Figure 3**.

Other monitored parameters worth noting include the hydrocarbon constituents benzene, toluene, ethylbenzene, and xylenes (BTEX). Previous investigators discovered some petroleum hydrocarbon constituents in wells, the result of the association of hydrocarbons with brine. The extent of benzene present above the drinking water standard of 5 parts per billion is shown on **Figure 3**. The area of elevated benzene is confined to a small portion of the study area and lies within the zone of severely impacted groundwater. Two network monitoring wells (PNR 27 and PNR 28) had detected values of benzene in 2003, but were below 1 ppb. Two monitoring wells within the study area (PNR 20 and PNR

21) had benzene values above the drinking water standard. All other network wells have been undetected for BTEX.

5.0 CONCLUSIONS

This section presents a summary of the results of the Public Water Supply Well Threat Study for year 2003. The study was conducted in response to an EPA Order, and addresses a 12 square mile area northeast of the City of Poplar, situated on the southern edge of the East Poplar Oil Field.

The study was designed to evaluate the downgradient extent of brine impacted groundwater within the study area. Identifying the extent of impacted groundwater is important because the Quaternary deposits are the sole developed source of groundwater for residents in the study area.

Data collection and evaluation in 2003 focused on defining the spatial extent of the leading edge of the brine impacted groundwater plume and to monitor variations in water quality within the known brine-impacted area.

The downgradient extent of brine impacted groundwater in the Quaternary deposits beneath the study area has been identified. The leading edge of the plume is defined by chloride concentrations that exceed the Secondary Drinking Water Standard of 250 mg/L.

Identification of the leading edge of the plume resulted from quarterly sampling of a groundwater monitoring program. The leading edge of the plume encompasses the northern portion of the study area and in the central portion extends southward as far as Section 33 in Township 28N and Range 51E. To the west, the plume appears to extend into the Poplar River valley. Some wells in and near the severely impacted groundwater core exhibit an increasing trend in chloride concentrations.

6.0 REFERENCES

Land & Water, 2003. Public Water Supply Well Threat Study, EPA Emergency Order No. SDWA-8-2001-33. Prepared by Land & Water Consulting, Inc. for Murphy Oil Company, Pioneer Natural Resources, Samson Hydrocarbons, and Marathon Ashland Petroleum. March 2003.

USEPA, 2001a. Emergency Administrative Order, East Poplar Oil Field, Fort Peck Indian Reservation, Montana. Docket No. SDWA-08-2001-33 issued by the United States Environmental Protection Agency. September 2001.

USEPA, 2001b. First Amended Emergency Administrative Order, East Poplar Oil Field, Fort Peck Indian Reservation, Montana. Docket No. SDWA-08-2001-33 issued by the United States Environmental Protection Agency. October 2001.

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FIGURES

Figure 1 – *Site Map*

Figure 2 – *May 2003 and November 2003 Groundwater Elevations and Contours*

Figure 3 – *Extent of Impacted Groundwater*

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Table 3-1 – *PWS Well Threat Study Analyte List*

Table 4-1 – *Water Quality Impact Summary – Study Area Wells*

APPENDIX

Appendix A – *Groundwater Elevation and Water Quality Data*

FIGURES

Poplar 2003 Year End Report



Figure 1. Site Map

LEGEND

Monitoring Wells

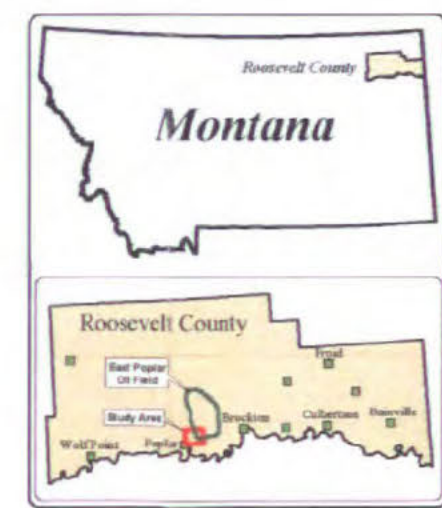
- ▲ LAW-Mxx
Monitoring well installed by Land & Water
- ▲ PNRx
Monitoring well established by Pioneer Natural Resources

Domestic Wells

- Existing supply well with designation established by name of property owner.

Public Water Supply Wells

- Public Water Supply Well for City of Poplar



1:28,000



Figure 1. Site Map

LAND & WATER CONSULTING, INC.
 Tel: 406-721-0354
 Fax: 406-721-0355
 info@landandwater.net
 P.O. Box 8254
 1120 Cedar Street
 Marcellus, MT 59807

Project: 110396
Date: February 2004
Location: Poplar, MT
Project Manager: T. Monroe
Drawn By: JCG
File: 10204_Figures_1.mxd

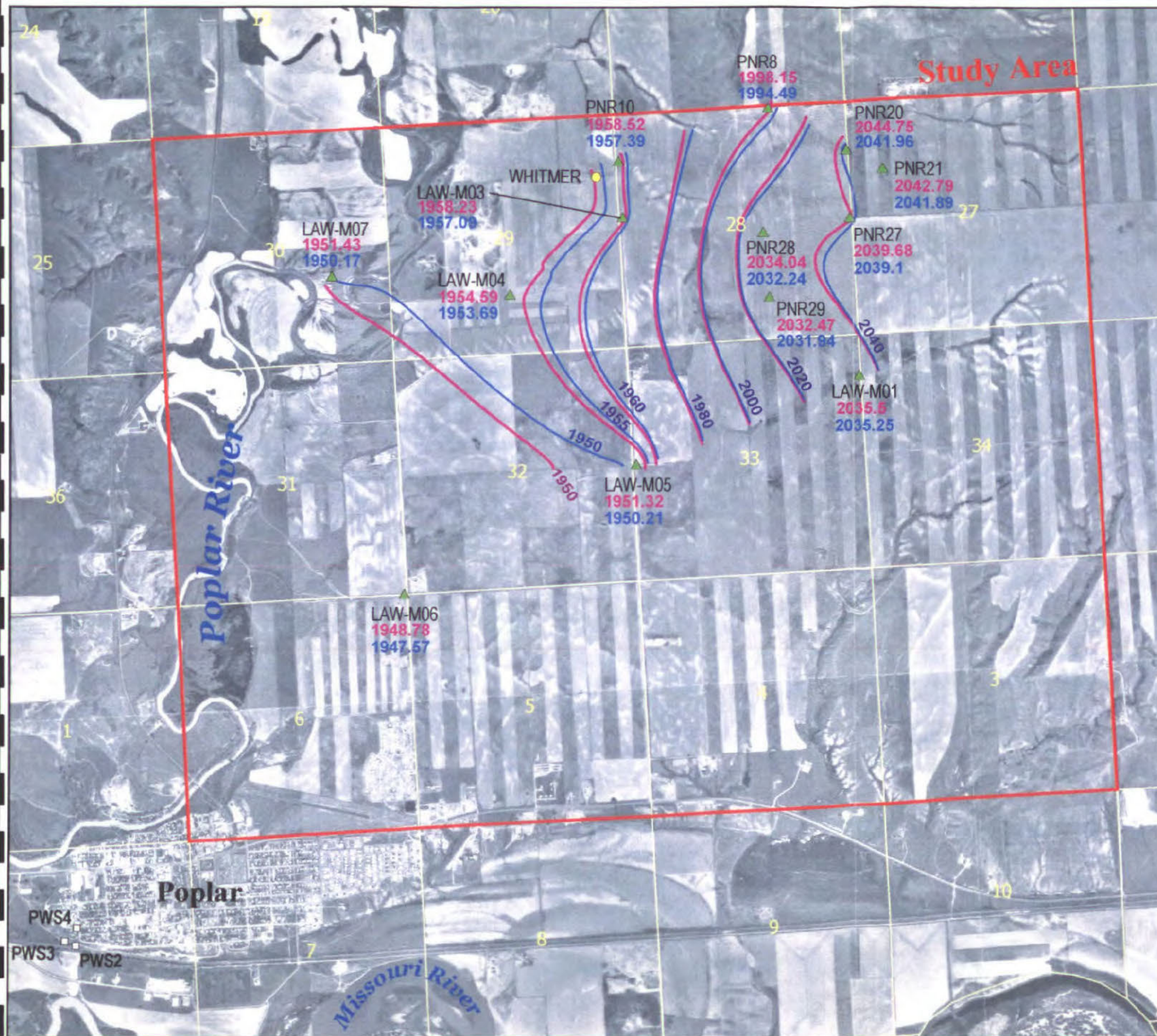


Figure 2.

LEGEND

Monitoring Wells

- ▲ LAW-Mxx
Monitoring well installed by Land & Water
- ▲ PNRx
Monitoring well established by Pioneer Natural Resources

Domestic Wells

- Existing supply well with designation established by name of property owner.

Public Water Supply Wells

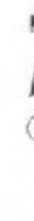
- Public Water Supply Well for City of Poplar

Groundwater Levels

- ▲ Well #
May 2003 Groundwater Elevation
November 2003 Groundwater Elevation

Groundwater Contours

- ~ May 2003
- ~ November 2003



1:28,000

Feet



**Figure 2. May 2003, November 2003
Groundwater Elevations and Contours**

LAND & WATER CONSULTING, INC.
Tel. 406-721-0354
Fax. 406-721-0355
info@landandwater.net
P.O. Box 8254
1120 Cedar Street
Missoula, MT 59807

Project: 110396
Date: February 2004
Location: Poplar, MT
Project Manager: T. Monroe
Drawn By: JCG
File: 10204_Figure_2.mxd



Figure 3.

LEGEND

Monitoring Wells

- ▲ LAW-Mxx
Monitoring well installed by Land & Water
- ▲ PNRx
Monitoring well established by Pioneer Natural Resources

Domestic Wells

- Existing supply well with designation established by name of property owner.

Public Water Supply Wells

- Public Water Supply Well for City of Poplar

Water Quality

Chloride Concentration, mg/L

- ▲ Well #
November 2003 Chloride
- November 2003
- November 2003 - Estimated

Benzene Concentration, µg/L

- ▲ Benzene Concentration, 5 µg/L

Figure 3. Extent of Impacted Groundwater

Appendix A

GROUNDWATER ELEVATION AND WATER QUALITY DATA

Poplar 2003 Year End Report

Groundwater Quality Summary PWS Well Threat Study

		Field SC	Field Temp.		Alkalinity as CaCO ₃	Bicarbonate	Calcium	Carbonate	Chloride	Magnesium	Lab pH	Potassium	Sodium	Solids, Total Dissolved at 180° C	Sulfate
Well No.	Date	mS	°C	°F	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	S.U.	mg/l	mg/l	mg/l	mg/l
LAW-M01 ¹	09/21/02	3.2	10.3	50.5	675	824	292	<1	26	199	7.4	16	219	2870	1410
LAW-M01	11/16/02				666	813	290	<1	21	200	7.6	14	184	2910	1430
LAW-M01	02/26/03	2.9	11.0	51.8	656	800	339	<1	19	222	7	19	213	2850	1340
LAW-M01	05/14/03	3.3	9.9	49.8	675	823	324	<1	21	206	7	19	194	2840	1360
LAW-M01	08/06/03	3.1	12.2	54.0	658	803	323	<1	15	202	6.8	17	191	2650	1250
LAW-M01	11/14/03	3.1	5.6	42.1		818	304	<1	17	195	7.1	18	192	2710	1370
LAW-M02 ²	09/20/02	14.1	10.9	51.6	63	76	449	<1	159	437	6.7	42	2600	13500	5550
LAW-M03	11/16/02				475	580	214	<1	696	132	7.7	8	471	3090	945
LAW-M03	02/25/03	4.2	9.7	49.5	489	597	283	<1	726	174	7.1	9	581	3240	1000
LAW-M03	05/13/03	4.8	10.4	50.7	501	612	283	<1	752	164	7.1	11	526	3340	990
LAW-M03	08/06/03	4.8	11.0	51.8	486	592	296	<1	811	171	6.9	10	519	3330	887
LAW-M03	11/14/03	4.8	9.5	49.1		600	297	<1	900	173	7.1	11	534	3450	1070
LAW-M04	11/16/02				335	409	92	<1	615	62	7.9	6	339	1590	159
LAW-M04	02/25/03	2.6	10.6	51.1	328	400	116	<1	704	79	7.5	8	402	1710	172
LAW-M04	05/13/03	3.0	10.4	50.7	340	415	112	<1	647	71	7.5	8	360	1700	167
LAW-M04	08/06/03	3.1	12.3	54.1	332	406	118	<1	699	76	7.3	8	366	1730	136
LAW-M04	11/14/03	3.0	8.8	47.8		415	116	<1	719	74	7.5	8	363	1720	151
LAW-M04	11/14/03	3.0	8.8	47.8		415	116	<1	719	74	7.5	8	363	1720	151
LAW-M05	11/17/02				624	761	147	<1	106	91	7.8	7	402	2350	1020
LAW-M05	02/26/03	3.2	10.5	50.9	640	780	215	<1	114	146	7.2	8	463	2720	1180
LAW-M05	05/14/03	3.6	10.3	50.5	661	806	214	<1	125	143	6.9	11	435	2740	1240
LAW-M05	08/06/03	3.6	12.2	54.0	646	788	223	<1	118	150	7	9	427	2770	1220
LAW-M05	11/13/03	3.6	9.7	49.5		795	225	<1	155	152	7.2	10	430	2890	1360
LAW-M06	11/17/02				446	544	28	<1	20	15	8.2	4	216	758	172
LAW-M06	02/26/03	1.2	11.4	52.5	430	525	36	<1	53	21	7.7	4	250	790	173
LAW-M06	05/14/03	1.3	10.3	50.5	443	541	35	<1	50	19	7.5	5	223	773	170
LAW-M06	08/06/03	1.3	12.0	53.6	435	530	37	<1	56	20	7.5	4	218	786	174
LAW-M06	11/13/03	1.3	9.4	48.9		536	35	<1	61	19	7.8	5	211	787	173
LAW-M07	12/19/02	1.2	8.0	46.4		546	36	<1	19	21	6.6	4	232	771	214
LAW-M07	02/26/03	1.2	8.8	47.8	439	535	37	<1	15	23	7.7	4	242	782	200
LAW-M07	05/14/03	1.2	10.3	50.5	451	550	35	<1	15	20	7.5	5	211	754	191
LAW-M07	08/06/03	1.2	11.9	53.4	443	540	37	<1	13	21	7.5	4	208	769	204
LAW-M07	11/13/03	1.2	7.6	45.7		551	36	<1	14	21	7.8	5	210	774	205
PNR-8	05/31/00	5.6	9.7	49.5	464	566	272	<1	380	200	7.8	12	420	2350	738
PNR-8	08/07/01	4.3	9.9	49.8	459	560	266	<1	764	196	7.1	10	406	3460	1210
PNR-8	08/16/01	4.6	10.0	50.0	<1	<1	254	<1	647	191	2.3	8	406	4460	2990
PNR-8	11/06/01	OR	7.8	46.0	457	557	327	<1	1020	243	7.2	14	480	3940	1150
PNR-8	02/22/02	5.9	11.5	52.7	489	596	307	<4	888	222	7.4	15	481	3640	1180
PNR-8	5/21/02	5.8	9.0	48.2	424	517	290	<4	1310	215	7.4	12	463	4020	1190
PNR-8	8/21/02	4.2	10.3	50.5	404	492	320	<4	1180	246	7.3	11	435	4240	1290
PNR-8	11/5/02	5.4	10.3	50.5	445	543	340	<4	1140	242	7.2	12	485	3880	1260
PNR-8	3/4/03	5.0	9.9	49.8	433	529	336	<4	1170	247	7.1	13	528	3960	1280
PNR-8	5/13/03	6.1	10.4	50.7	445	543	350	<4	1090	254	7.2	13	552	3910	1150
PNR-8	8/12/03	4.2	10.6	51.1											
PNR-8	11/4/03	3.9	8.0	46.4	462	564	321	<4	1060	234	7.4	12	452	3700	1190
PNR-10	06/01/00	3.2	10.5	50.9	528	645	208	<1	147	111	7.6	8	435	2480	1210
PNR-10	08/08/01	3.7	11.4	52.5	571	697	230	<1	245	127	7.2	8	449	2890	1260
PNR-10	08/16/01	MNW	11.3	52.3	550	672	229	<1	263	128	7.2	8	482	2900	1320
PNR-10	11/07/01	NM	9.4	49.0	528	644	217	<1	196	121	7.4	10	443	2690	1220

MTBE ug/l	Benzene ug/l	Toluene ug/l	Ethylbenzene ug/l	m+p-Xylenes ug/l	o-Xylene ug/l	Xylenes, Total ug/l	Total Petroleum Hydrocarbons mg/l
<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
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	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
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<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	<0.50	<0.50	<0.50			<0.50	NT
	<0.50	<0.50	<0.50			<0.50	<0.1
	<0.50	0.55	<0.50			0.54	<0.1
	<0.50	<0.50J	<0.50			<1.0	0.5
	<0.50	<0.50J	<0.50			<0.50	<0.1
	<0.50	<0.50J	<0.50			<0.50	<0.1
	<0.50	<0.50	<0.50			<0.50	<0.1
	<0.5	<0.5	<0.5			<0.5	<0.1
	<0.50	<0.50	<0.50			<0.50	<0.1
	<0.50	<0.50	<0.50			<0.50	<0.1
	<0.50	<0.50	<0.50			<0.50	<0.1
	<0.50	<0.50	<0.50			<0.50	NT
	<0.50	<0.50	<0.50			<0.50	<0.1
	<0.50	<0.50	<0.50			<0.50	<0.1
	<0.50	<0.50	<0.50			<1.0	0.6

Groundwater Quality Summary
PWS Well Threat Study

Well No.	Date	Field SC mS	Field Temp.		Alkalinity as CaCO ₃ mg/l	Bicarbonate mg/l	Calcium mg/l	Carbonate mg/l	Chloride mg/l	Magnesium mg/l	Lab pH S.U.	Potassium mg/l	Sodium mg/l	Solids, Total Dissolved at 180° C mg/l	Sulfate mg/l
			°C	°F											
PNR-10	02/20/02	2.4	10.3	50.5	578	705	230	<4	304	131	7.0	8	448	2920	1340
PNR-10	5/21/02	3.8	11.6	52.9	535	653	214	<4	415	124	7.2	8	430	2810	1680
PNR-10	8/20/02	3.4	13.1	55.6	512	624	230	<4	351	139	7.2	7	407	3090	1350
PNR-10	11/5/02	3.9	11.0	51.8	524	639	263	<4	384	145	7.2	11	581	3130	1380
PNR-10	3/4/03	3.8	9.2	48.6	540	658	268	<4	426	150	7.0	9	470	3180	1340
PNR-10	5/27/03	3.6	12.4	54.3	516	630	268	<1	434	155	7.1	9	476	3230	1350
PNR-10	8/13/03	3.9	13.3	55.9	512	624	263	<1	457	149	6.9	9	444	3270	1340
PNR-10	11/4/03	3.6	10.2	50.4	512	624	240	<4	512	162	7.2	9	468	3310	1420

PNR-20	08/08/01	39.0	11.2	52.2	413	504	1750	<1	16100	1230	7.2	42	5180	29000	1190
PNR-20	08/15/01	MNW	10.4	50.7	412	502	1800	<1	12900	1270	7.1	46	4800	25400	1420
PNR-20	11/08/01	NM	11.1	52.0	508	620	1610	<1	10600	1200	6.9	37	3480	19900	1460
PNR-20	02/19/02	34.8	10.0	50.0	391	477	1830	<4	15400	1280	6.8	43	5460	25200	1180
PNR-20	5/22/02	40.2	11.2	52.2	398	486	1580	<1	17400	1110	7.0	40	5050	29600	1030
PNR-20	8/20/02	37.4	12.3	54.1	425	519	1800	<4	17100	1350	6.8	35	6840	31400	1390
PNR-20	11/5/02	43.9	10.3	50.5	427	521	1930	<4	18400	1260	6.9	44	6790	33600	1500
PNR-20	3/4/03	37.4	9.2	48.6	417	509	1790	<4	17400	1180	6.8	47	6840	30200	1650
PNR-20	5/28/03	42.5	11.8	53.2	438	534	1950	<1	17300	1270	6.8	50	7300	32800	1270
PNR-20	8/13/03	34.3	10.6	51.1	431	526	1740	<1	18100	1150	6.6	42	6260	32000	1130
PNR-20	11/5/03	26.9	9.5	49.1	427	521	1980	<4	21300	1260	6.8	62	8580	35700	1030

PNR-21	08/09/01	65.5	11.0	51.8	501	611	2060	<1	26500	1100	6.8	63	12500	47000	1450
PNR-21	08/16/01	62.0	11.4	52.5	548	669	2140	<1	26900	1170	6.9	61	13200	47000	1510
PNR-21	11/08/01	60.3	14.4	58.0	538	656	2090	<1	27900	1140	6.7	68	13100	45300	1630
PNR-21	02/21/02	60.3	10.4	50.7	562	685	1970	<4	28300	1060	6.9	66	12900	45800	1410
PNR-21	5/22/02	70.5	11.8	53.2	544	663	1800	<4	28600	959	6.8	60	12600	47400	1560
PNR-21	8/21/02	63.1	12.7	54.9	553	675	1820	<4	29200	980	6.8	74	12900	51200	1690
PNR-21	11/5/02	66.3	10.8	51.4	559	682	2000	<4	28600	1020	6.8	61	13000	49600	1700
PNR-21	3/5/03	62.2	10.7	51.3	546	666	1900	<4	27000	897	6.7	56	12200	46400	2070
PNR-21	5/28/03	49.1	14.5	58.1	531	647	1940	<1	27100	978	6.7	73	13200	49100	1460
PNR-21	8/13/03	62.8	14.1	57.4	560	683	1800	<1	28600	928	6.6	70	13000	48800	1160
PNR-21	11/5/03	28.1	9.6	49.3	537	655	1450	<4	28100	738	6.8	57	10600	46300	1170

PNR-27	08/21/01	27.6	10.7	51.3	592	722	1790	<1	10300	1290	7.1	37	2440	21600	2020
PNR-27	09/05/01	25.9	12.3	54.1	594	725	1990	<1	10000	1370	6.8	39	2700	20400	1940
PNR-27	11/06/01	28.1	10.0	50.0	569	694	1960	<1	10900	1400	6.7	40	2840	21200	1750
PNR-27	02/20/02	27.5	10.5	50.9	628	767	1970	<4	11400	1390	6.8	54	3130	21000	1530
PNR-27	5/21/02	32.1	13.7	56.7	589	719	1790	<4	12000	1260	6.8	40	2990	23800	1940
PNR-27	8/20/02	29.8	14.5	58.1	580	708	1900	<4	12600	1210	6.9	32	2850	25600	1850
PNR-27	11/6/02	32.7	11.3	52.3	583	712	2090	<4	11200	1400	6.8	42	3450	24200	1820
PNR-27	3/5/03	30.3	10.1	50.2	567	691	2060	<4	12900	1370	6.6	43	3740	22400	2080
PNR-27	5/28/03	25.4	14.4	57.9	589	718	1990	<1	12200	1330	6.7	57	3640	25500	1620
PNR-27	8/13/03	32.7	15.1	59.2	577	705	1900	<1	13000	1320	6.6	54	3660	24400	1280
PNR-27	11/5/03	41.7	9.1	48.4	568	693	1760	<4	13100	1370	6.8	53	3760	23300	1430

PNR-28	08/21/01	31.4	10.3	50.5	501	612	1910	<1	11700	1460	7.2	39	3090	25200	1480
PNR-28	09/05/01	28.4	13.0	55.4	493	601	2020	<1	12300	1470	6.9	36	3200	22600	
PNR-28	11/06/01	29.7	12.2	54.0	519	633	1880	<1	10500	1380	6.7	34	3070	24700	1660
PNR-28	02/20/02	31.9	10.6	51.1	522	637	2060	<4	13700	1490	6.8	82	3850	23000	1430
PNR-28	5/21/02	38.8	12.4	54.3	450	549	1990	<4	14700	1430	6.8	43	3910	27400	1820
PNR-28	8/20/02	34.2	14.4	57.9	510	622	2090	<4	15200	1340	6.8	39	3510	31200	1590
PNR-28	11/5/02	36.4	10.2	50.4	516	630	2340	<4	15700	1640	6.8	46	4850	29700	1740
PNR-28	3/5/03	36.4	10.2	50.4	503	614	2260	<4	15700	1480	6.6	45	4930	26700	1880
PNR-28	5/28/03	32.8	13.1	55.6	519	633	2130	<1	15100	1450	6.7	63	4900	30200	1460
PNR-28	8/13/03	40.3	14.4	57.9	517	631	2140	<1	16800	1440	6.5	53	5200	29500	1270

MTBE ug/l	Benzene ug/l	Toluene ug/l	Ethylbenzene ug/l	m+p-Xylenes ug/l	o-Xylenes ug/l	Xylenes, Total ug/l	Total Petroleum Hydrocarbons mg/l
	<0.50	<0.50	<0.50			<0.50	<0.1
	<0.50	<0.50	<0.50			<0.50	<0.1
	<0.50	<0.50	<0.50			<0.50	<0.1
	<0.5	<0.5	<0.5			<0.5	<0.1
	<0.50	<0.50	<0.50			<0.50	<0.1
	<0.50	<0.50	<0.50			<0.50	<0.1
	<0.50	<0.50	<0.50			<0.50	<0.1
	<0.50	<0.50	<0.50			<0.50	<0.1

	5.4	<0.50	<0.50			<1.0	<0.1
	5.7	<0.50	<0.50			<0.50	<0.1
	1.4	<0.50	<0.50			<1.0	<0.1
	11	<0.50	<0.50			<0.50	<0.1
	10	<0.50	<0.50			<0.50	<0.1
	13	<0.5	<0.5			<0.50	<0.1
	17	<0.5	<0.5			<0.5	<0.1
	15	<0.50	<0.50			<0.50	<0.1
	13	<0.50	<0.50			<0.50	<0.1
	13	<0.50	<0.50			<0.50	<0.1
	15	0.51	<0.50			<0.50	<0.1

	28	<0.50	<0.50			<1.0	<0.1
	26(D)	<0.50	<0.50			<0.50	<0.1
	32	<0.50	<0.50			<1.0	<0.1
	32	<0.50	<0.50			<0.50	2.2
	33	<0.50	<0.50			<0.50	<0.1
	35	<0.50	<0.50			<0.50	<0.1
	37	<0.5	<0.5			<0.5	<0.1
	36	<0.50	<0.50			<0.50	<0.1
	32	<0.50	<0.50			<0.50	<0.1
	25	<0.50	<0.50			<0.50	<0.1
	29	<0.50	<0.50			<0.50	<0.1

	<0.50	<0.50	<0.50			<0.50	<0.1
	<0.50	<0.50	<0.50			<0.50	<0.1
	<0.50	<0.50	<0.50			<1.0	0.4
	<0.50	<0.50	<0.50			<0.50	1.0
	<0.50	<0.50	<0.50			<0.50	<0.1
	<0.50	<0.50	<0.50			<0.50	<0.1
	0.49 (J)	<0.5	<0.5			<0.5	<0.1
	<0.50	<0.50	<0.50			<0.50	<0.1
	0.42 (J)	<0.50	<0.50			<0.50	<0.1
	0.81	<0.50	<0.50			<0.50	<0.1
	0.66	1	<0.50			<0.50	<0.1

	<0.50	<0.50	<0.50			<0.50	<0.1
	<0.50	<0.50	<0.50			<0.50	<0.1
	<0.50	<0.50	<0.50			<1.0	<0.1
	<0.50	<0.50	<0.50			<0.50	1.2
	<0.50	<0.50	<0.50			<0.50	<0.1
	<0.50	<0.50	<0.50			<0.50	<0.1
	<0.5	<0.5	<0.5			<0.5	<0.1
	<0.50	<0.50	<0.50			<0.50	<0.1
	<0.50	<0.50	<0.50			<0.50	<0.1
	0.51	<0.50	<0.50			<0.50	<0.1

Groundwater Quality Summary
PWS Well Threat Study

Well No.	Date	Field SC mS	Field Temp.		Alkalinity as CaCO ₃ mg/l	Bicarbonate mg/l	Calcium mg/l	Carbonate mg/l	Chloride mg/l	Magnesium mg/l	Lab pH S.U.	Potassium mg/l	Sodium mg/l	Solids, Total Dissolved at 180° C mg/l	Sulfate mg/l	MTBE ug/l	Benzene ug/l	Toluene ug/l	Ethylbenzene ug/l	m+p-Xylenes ug/l	o-Xylene ug/l	Xylenes, Total ug/l	Total Petroleum Hydrocarbons mg/l
			°C	°F																			
PNR-28	11/5/03	4.6	9.2	48.6	484	591	2180	< 4	17300	1520	6.9	58	6010	29100	1350		<0.50	<0.50	<0.50			<0.50	< 0.1
PNR-29	08/21/01	5.1	10.1	50.2	606	740	390	<1	129	290	7.2	14	480	4760	1940		<0.50	<0.50	<0.50			<0.50	<0.1
PNR-29	09/05/01	4.9	12.8	55.0	695	847	393	<1	104	291	6.5	11	483	4760			<0.50	<0.50	<0.50			<0.50	<0.1
PNR-29	11/06/01	4.9	11.7	53.0	691	843	400	<1	99	286	7.1	11	469	4650	1880		<0.50	0.69	<0.50			<1.0	<0.1
PNR-29	02/20/02	4.8	10.1	50.2	623	760	399	<4	106	292	6.9	13	501	4640	2070		<0.50	<0.50	<0.50			<0.50	<0.1
PNR-29	5/21/02	5.4	11.9	53.4	662	807	359	<4	83	262	7.3	11	449	4640	2080		<0.50	<0.50	<0.50			<0.50	<0.1
PNR-29	8/20/02	4.3	13.3	55.9	669	816	376	<4	113	290	7.2	10	431	4780	2030		<0.50	<0.50	<0.50			<0.50	< 0.1
PNR-29	11/5/02	4.9	9.9	49.8	680	830	403	< 4	117	290	7.1	12	469	4770	2070		< 0.5	< 0.5	< 0.5			< 0.5	< 0.1
PNR-29	3/5/03	4.8	9.2	48.6	661	807	410	< 4	181	292	7.2	13	550	4730	2060		<0.50	<0.50	<0.50			<0.50	<0.1
PNR-29	5/28/03	4.4	12.1	53.8	677	826	418	< 1	116	292	7.1	13	489	4790	2030		<0.50	<0.50	<0.50			<0.50	< 0.1
PNR-29	8/13/03	4.0	11.5	52.7	674	822	404	< 1	88	288	7.0	11	460	4800	1920		<0.50	<0.50	<0.50			<0.50	< 0.1
PNR-29	11/4/03	4.6	9.8	49.6	684	835	362	< 4	104	305	7.1	13	482	4760	2120		<0.50	<0.50	<0.50			<0.50	< 0.1
Whitmer	11/04/94								220					1170									
Whitmer	08/27/97								520					1570									
Whitmer	04/20/99								660					1780									
Whitmer	06/30/99								774					1950									
Whitmer	05/31/00	3.3	10.1	50.2	353	429	133	<1	794	88	8.2	8	432	1970	279		<0.50	<0.50	<0.50			<0.50	NT
Whitmer	08/10/01	3.9	10.8	51.4	366	447	168	<1	1020	115	7.4	10	524	2520	287		<0.50	<0.50	<0.50			<1.0	<0.1
Whitmer	08/22/01	3.4	11.1	52.0	360	439	155	<1	1020	105	7.5	8	445	2470	270		<0.50	<0.50	<0.50			<0.50	<0.1
Whitmer	11/09/01	3.5	9.7	49.5	343	418	168	<1	1060	111	7.5	9	484	2410	285		<0.50	<0.50	<0.50			<1.0	
Whitmer	02/22/02	4.7	10.7	51.3	353	430	165	<4	1110	110	7.6	8	472	2530	288		<0.50	<0.50	<0.50			<0.50	<1.0
Whitmer	5/22/02	4.4	10.2	50.4	339	414	164	<4	1290	112	7.6	9	457	2650	222		<0.50	<0.50	<0.50			<0.50	<1.0
Whitmer	8/21/02	3.8	10.8	51.4	331	404	187	<4	1240	110	7.6	9	512	2710	296		<0.50	<0.50	<0.50			<0.50	< 0.1
Whitmer	11/5/02	4.3	10.3	50.5	334	407	197	< 4	1250	129	7.5	10	509	2670	309		< 0.5	< 0.5	< 0.5			< 0.5	< 0.1
Whitmer	3/4/03	4.2	9.9	49.8	318	388	215	< 4	1310	151	7.3	10	619	2720	320		<0.50	<0.50	<0.50			<0.50	<1.0
Whitmer	5/13/03	5.0	11.0	51.8	329	402	216	< 4	1330	144	7.4	12	531	2760	306		<0.50	<0.50	<0.50			<0.50	< 0.1
Whitmer	8/14/03	4.0	11.2	52.2	326	398	221	< 1	1350	141	7.5	11	536	2950	267		<0.50	<0.50	<0.50			<0.50	< 0.1
Whitmer	11/4/03	4.6	11.0	51.8	323	395	224	< 4	1490	148	7.5	12	548	2940	248		<0.50	<0.50	<0.50			<0.50	< 0.1

Notes:

- 1 LAW-M01 was purged a total of 4 bore volumes, the last 3 having consistent field parameters.
- 2 LAW-M02: After 2 hours of well development via drill rig, well was purged dry 3 times, then sampled.
- 3 LAW-07, a domestic well, was sampled from outside faucet.
- 4 Monitoring wells M39 & USGS 93-4B were purged via 3', 1.5" dia bailers, for 10 bailer volumes.
- 5 GeoProbe samples were suctioned to surface, only ~2 liters were pulled from each site.
- * umhos/cm
- < # Analyte not detected, number shown is reporting limit
- D Value was derived from a 10 times dilution.
- D1 Value was derived from a 100 times dilution.
- J Estimated value. Present but less than the limit of quantitation.
- MNW meter failure, reading recorded in field notes but not used
- NM not measured
- NT Not tested.
- OR over range of meter, SC>2.0 mS
- T This target analyte was found in the associated trip blank as well as the sample.

Data for PNR and many of the "M" wells provided by HKM Engineering, Inc.

Well	Casing Elevation	5/21/2002		6/19/2002		7/25/2002		8/19/2002		9/12/2002		11/4/2002		12/18/2002		1/6/2003		2/24/2003		5/13/2003		8/6/2003		11/13/2003	
		DTW	Elev.	DTW	Elev.	DTW	Elev.	DTW	Elev.	DTW	Elev.	DTW	Elev.	DTW	Elev.	DTW	Elev.	DTW	Elev.	DTW	Elev.	DTW	Elev.	DTW	Elev.
PNR8	2062.99	64.40	1998.59	64.6	1998.39	64.41	1998.58	64.61	1998.38	64.75	1998.24			64.65	1998.34	65.26	1997.73	64.00	1998.99	64.84	1998.15	64.94	1998.05	68.50	1994.49
PNR10	2011.69	53.79	1957.9	53.65	1958.04	54.1	1957.59	54.27	1957.42	54.25	1957.44			54.05	1957.64	54.1	1957.59	53.84	1957.85	53.17	1958.52	54.11	1957.58	54.30	1957.39
PNR20	2087.16	41.60	2045.56	42.01	2045.15	41.8	2045.36	41.91	2045.25	42.1	2045.06			42.37	2044.79	42.21	2044.95	42.3	2044.86	42.41	2044.75	42.39	2044.77	45.2	2041.96
PNR21	2101.59	58.80	2042.79	59.09	2042.5	56.15	2045.44	59.02	2042.57	59.15	2042.44			59.7	2041.89	59.59	2042	58.78	2042.81	58.8	2042.79	59.32	2042.27	59.7	2041.89
PNR27	2095.30	55.25	2040.05	55.45	2039.85	54.83	2040.47	55.34	2039.96	55.8	2039.5			55.65	2039.65	55.58	2039.72	55.17	2040.13	55.62	2039.68	55.67	2039.63	56.2	2039.1
PNR28	2078.44	44.45	2033.99	44.64	2033.8			44.59	2033.85	44.59	2033.85	44.55	2033.89	44.95	2033.49			44.49	2033.95	44.4	2034.04	44.89	2033.55	46.2	2032.24
PNR29	2072.64	39.80	2032.84	39.96	2032.68			39.96	2032.68	39.96	2032.68	39.82	2032.82	40.25	2032.39			39.7	2032.94	40.17	2032.47	40.21	2032.43	40.7	2031.94
Whitmer	1981.44	24.1	1957.34		1957.34	23.97	1957.47	24.20	1957.24									24.3	1957.14	24.2	1957.24	25	1956.44	25	1956.44
LAWM01	2093.10									57.75	2035.35	57.32	2035.78	57.35	2035.75	57.58	2035.52	57.38	2035.72	57.6	2035.5	57.65	2035.45	57.85	2035.25
LAWM03	1988.90													31.41	1957.49	31.8	1957.1	31.45	1957.45	30.67	1958.23	31.66	1957.24	31.81	1957.09
LAWM04	1977.11													23.04	1954.07	23.55	1953.56	23	1954.11	22.52	1954.59	23.3	1953.81	23.42	1953.69
LAWM05	2049.42													96.85	1952.57	99.12	1950.3	98.39	1951.03	98.1	1951.32	98.98	1950.44	99.21	1950.21
LAWM06	2024.28													76.64	1947.64	76.56	1947.72	75.72	1948.56	75.5	1948.78	76.6	1947.68	76.71	1947.57
LAWM07	1970.30													19.95	1950.35	19.94	1950.36	19.88	1950.42	18.87	1951.43	19.99	1950.31	20.13	1950.17

SENDER: COMPLETE THIS SECTION

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SID CAMPBELL
MURPHY OIL USA, INC.
1001 SOUTH ROBERTSON STREET
NEW ORLEANS, LOUISIANA 70112
131

2.

PS

SEN

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- Print your name and address on the reverse so that we can return the card to you.
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Article Addressed to:

MARK S. DALTON
THE SAMSON COMPANIES
TWO WEST SECOND STREET
TULSA, OK 74103

2. Article Number

(Transfer from service label)

7003 2260 0001 7790 7980

PS Form 3811, August 2001

Domestic Return Receipt

2ACPRI-03-Z-0985

Docket No. SDWA-08-2004-0035

SENDER: COMPLETE THIS SECTION

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- Print your name and address on the reverse so that we can return the card to you.
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1. Article Addressed to:

SCOTT M. DUBOFF
WRIGHT & TALISMAN, P.C.
1200 G STREET, N.W. SUITE 600
WASHINGTON, D.C. 20005-3802

2. Article Number

(Transfer from service label)

7003 2260 0001 7790 8819

PS Form 3811, August 2001

Domestic Return Receipt

2ACPRI-03-Z-0985

Docket No. SDWA-08-2004-0035

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X *Sid Campbell*☐ Agent☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
if YES, enter delivery address below: ☐ No

3. Service Type

☒ Certified Mail☐ Express Mail☒ Registered☒ Return Receipt for Merchandise☐ Insured Mail☐ C.O.D.

Restricted Delivery? (Extra Fee)

☐ Yes

1003 7790 8826

08-2004-0035

2ACPRI-03-Z-0985

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X *Neda Hilliard*☐ Agent☐ Addressee

B. Received by (Printed Name)

NEDA HILLIARD

C. Date of Delivery

7-26-04

D. Is delivery address different from item 1? ☐ Yesif YES, enter delivery address below: ☐ No

3. Service Type

☒ Certified Mail☐ Express Mail☐ Registered☒ Return Receipt for Merchandise☐ Insured Mail☐ C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

SID CAMPBELL
MURPHY OIL USA, INC.
1401 SOUTH ROBERTSON STREET
NEW ORLEANS, LOUISIANA 70112
131

ENFLH

JUL 21 2001

2. Article Number

(Transfer from service label)

7003 2260 0001 7790 8826

PS Form 3811, August 2001

Domestic Return Receipt

2ACPRI-03-Z-0985

Docket No. SDWA-08-2004-0035

SENDER: COMPLETE THIS SECTION

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- Attach this card to the back of the mailpiece, or on the front if space permits.

Article Addressed to:

MARK S. DALTON
THE SAMSON COMPANIES
TWO WEST SECOND STREET
TULSA, OK 74103

ENFL

JUL 21 2004

2. Article Number

(Transfer from service label)

7003 2260 0001 7790 7980

PS Form 3811, August 2001

Domestic Return Receipt

2ACPRI-03-Z-0985

Docket No. SDWA-08-2004-0035

SENDER: COMPLETE THIS SECTION

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1. Article Addressed to:

SCOTT M. DUBOFF
WRIGHT & TALISMAN, P.C.
1200 G STREET, N.W. SUITE 600
WASHINGTON, D.C. 20005-3802

ENFLG

JUL 21 2004

2. Article Number

(Transfer from service label)

7003 2260 0001 7790 8819

PS Form 3811, August 2001

Domestic Return Receipt

2ACPRI-03-Z-0985

Docket No. SDWA-08-2004-0035

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X *Sid Campbell*☐ Agent☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery

7/23/01

D. Is delivery address different from item 1?

☐ Yes

If YES, enter delivery address below:

☐ No

3. Service Type

☒ Certified Mail☐ Express Mail☐ Registered☒ Return Receipt for Merchandise☐ Insured Mail☐ C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X *Neda Hilliard*☐ Agent☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery

NEDA HILLIARD

7-26-04

D. Is delivery address different from item 1?

☐ Yes

If YES, enter delivery address below:

☐ No

3. Service Type

☒ Certified Mail☐ Express Mail☐ Registered☒ Return Receipt for Merchandise☐ Insured Mail☐ C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes

SENDER: COMPLETE THIS SECTION

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- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

Article Addressed to:

OFFICE OF GENERAL COUNSEL
ATTN: MARC SKEEN
5205 N. O'CONNOR BLVD.
SUITE 900
IRVING, TEXAS 75039

ENFL 9

JUL 21 2004

2. Article Number

(Transfer from service label)

7003 2260 0001 7790 8796

PS Form 3811, August 2001

Domestic Return Receipt

2ACPRI-03-Z-0985

Docket No. SDWA-08-2004-0035

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

MANAGER, OPERATION SERVICES
ATTN: WILBUR DOVER
5205 N. O'CONNOR BLVD.
SUITE 900
IRVING, TEXAS 75039

ENFL P

JUL 21 2004

2. Article Number

(Transfer from service label)

7003 2260 0001 7790 8802

PS Form 3811, August 2001

Domestic Return Receipt

2ACPRI-03-Z-0985

Docket No. SDWA-08-2004-0035

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

ELIZABETH E. MACK
LOCKE LIDDELL & SAPP
2200 ROSS AVENUE, SUITE 2200
DALLAS, TX 75201

ENFL C

JUL 21 2004

2. Article Number

(Transfer from service label)

7003 2260 0001 7790 7973

PS Form 3811, August 2001

Domestic Return Receipt

2ACPRI-03-Z-0985

Docket No. SDWA-08-2004-0035

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X [Signature]

☐ Agent☐ Addressee

B. Received by (Printed Name)

Luliana Beato

C. Date of Delivery

7/26

D. Is delivery address different from item 1?

if YES, enter delivery address below:

☐ Yes☐ No

3. Service Type

☒ Certified Mail☐ Express Mail☐ Registered☒ Return Receipt for Merchandise☐ Insured Mail☐ C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X [Signature]

☐ Agent☐ Addressee

B. Received by (Printed Name)

Luliana Beato

C. Date of Delivery

7/26

D. Is delivery address different from item 1?

if YES, enter delivery address below:

☐ Yes☐ No

3. Service Type

☒ Certified Mail☐ Express Mail☐ Registered☒ Return Receipt for Merchandise☐ Insured Mail☐ C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X [Signature]

☐ Agent☐ Addressee

B. Received by (Printed Name)

Luliana Beato

C. Date of Delivery

7/26

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if YES, enter delivery address below:

☐ Yes☐ No

3. Service Type

☒ Certified Mail☐ Express Mail☐ Registered☒ Return Receipt for Merchandise☐ Insured Mail☐ C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes



U.S. Department of Justice

Environment and Natural Resources Division

LJG:DAC
90-5-1-7-16553

David A. Carson
Environmental Defense Section
999 18th Street
Suite 945 North Tower
Denver, CO 80202

Telephone (303) 312-7309
Facsimile (303) 312-7331

July 21, 2004

John D. Fognani, Esq.
Fognani Guibord & Homsy, LLP
1700 Lincoln Street
Suite 2222
Denver, Colorado 80203

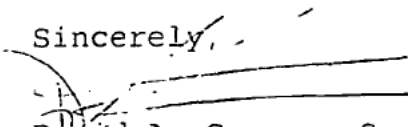
Re: Marathon Oil Co. v. EPA, Appeal No. 01-9543

Dear John:

As requested, enclosed please find two original signed copies of the Settlement Agreement with Conditional Release of Marathon. Please note that you have 10 business days from July 20 to move to dismiss the Petition for Review with prejudice. In that regard, I also enclose a signed copy of the Stipulation to dismiss that David Aemmer's office prepared for the parties.

Please do not hesitate to call me directly at (303) 312-7309 if you have any questions. Thanks for your efforts. It is good to have this concluded.

Sincerely,


David A. Carson, Senior Counsel
Environmental Defense Section

cc: Jim Eppers
Steven Moores
Nathan Wiser

UNITED STATES COURT OF APPEALS
FOR THE TENTH CIRCUIT

MARATHON OIL COMPANY,

Petitioner,

v.

No. 01-9543


UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY,

Respondent

STIPULATION TO DISMISS

Pursuant to discussions held under Tenth Circuit Rule 33.1, Federal Rule of Appellate Procedure 42(b), and the agreement of the parties, the undersigned hereby stipulate that the above appeal may be dismissed with prejudice. Each party shall bear its own costs on appeal.

JOHN D. FOGNANI, Esq.
Attorney for Petitioner
Marathon Oil Company



DAVID A. CARSON, Esq.
Attorney for Respondent
United States Environmental Protection
Agency

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8

2004 JUL 20 PM 1:40

IN THE MATTER OF:

Marathon Oil Company,

Murphy Exploration and Production Co.,

Pioneer Natural Resources USA, Inc., and

Samson Hydrocarbons Co.,

Respondents.

East Poplar Oil Field

Fort Peck Indian Reservation

Montana

Proceedings under Section 1431(a) of the
Safe Drinking Water Act,
42 U.S.C. §300g-i(a)

Docket No. SDWA-8-99-68
SDWA-08-2001-33

FILED
EPA REGION VIII
HEARING CLERK

**Settlement Agreement with
Conditional Release of Respondent
Marathon**

WHEREAS, the United States Environmental Protection Agency, Region 8 ("EPA") issued two unilateral Emergency Administrative Orders (each an "EAO" and collectively the "EAOs") under Section 1431(a) of the Safe Drinking Water Act ("SDWA"), docket numbers SDWA-8-99-68 and SDWA-08-2001-33, as amended, concerning contamination of an underground source of drinking water ("USDW") in the East Poplar Oil Field ("Oil Field") on the Fort Peck Indian Reservation in northeastern Montana;

WHEREAS, Marathon Oil Company ("Marathon") was a Respondent to the EAOs based on alleged activities of Marathon's predecessor, TXO Production Corporation (referred to herein collectively with Marathon as "Marathon");

WHEREAS, Marathon filed a Petition for Review of First Amended Administrative Emergency Order, Docket No. SDWA-08-2001-33 ("Petition for Review") in the United States Court of Appeals for the Tenth Circuit;

WHEREAS, the Petition for Review is now pending in the Tenth Circuit;

NOW THEREFORE, EPA and Marathon have entered into this Settlement Agreement with Conditional Release of Respondent Marathon ("Settlement Agreement") and agree as follows:

1. Based on information presented to EPA by Marathon detailing the results of investigations it conducted related to contamination of the USDW at the Oil Field, EPA has determined that Marathon should be released from the EAOs.
2. EPA hereby releases Marathon from the EAOs.
3. If, after execution of this Settlement Agreement, EPA receives new or additional information regarding contamination of the USDW at the Oil Field indicating it would be appropriate to take administrative or judicial action against Marathon under section 1431 of the Safe Drinking Water Act or any other applicable provision of law, EPA hereby reserves its right to do so.
4. Within ten (10) business days after issuance and execution of this Settlement Agreement, Marathon will move to dismiss with prejudice its Petition for Review.
5. This Settlement Agreement does not constitute a waiver, suspension, or modification of the requirements of any federal or state statute, regulation, or condition of any permit issued thereunder, including the requirements of the SDWA, which remain in full force and effect.
6. EPA and Marathon agree to bear their own costs and attorneys fees in connection

with this matter, including all administrative and judicial proceedings to date.

7. Each of the undersigned representatives of the parties to this Settlement Agreement certifies that he or she is fully authorized by the party represented to execute and legally bind the party to the terms and conditions of the Settlement Agreement.

FOR THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY:

Elisabeth Evans
ELISABETH EVANS, Director
Technical Enforcement Program
Office of Enforcement, Compliance
and Environmental Justice
United States Environmental Protection Agency, Region 8

Date: 7/20, 2004

Michael J. Janik
DAVID J. JANIK, Supervisory Attorney
Legal Enforcement Program
Office of Enforcement, Compliance
and Environmental Justice
United States Environmental Protection Agency, Region 8

Date: 7/20, 2004

David A. Carson
DAVID A. CARSON
United States Department of Justice
Environment and Natural Resources Division
Suite 945 - North Tower
999 18th Street
Denver, Colorado 80202
(303) 388-7362

Date: 7/20, 2004

FOR MARATHON OIL COMPANY;

Edward A. Strenkowski
EDWARD A. STRENKOWSKI, Esq.
Marathon Oil Company
5555 San Felipe Road
Houston, Texas 77352-3128

Date: July 12, 2004

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8

2004 JUL 20 PM 1:40

IN THE MATTER OF:

Marathon Oil Company,

Murphy Exploration and Production Co.,

Pioneer Natural Resources USA, Inc., and

Samson Hydrocarbons Co.,

Respondents.

East Poplar Oil Field

Fort Peck Indian Reservation

Montana

Proceedings under Section 1431(a) of the
Safe Drinking Water Act,
42 U.S.C. §300g-i(a)

Docket No. SDWA-8-99-68

SDWA-08-2001-33

Settlement Agreement with
Conditional Release of Respondent
Marathon

WHEREAS, the United States Environmental Protection Agency, Region 8 ("EPA") issued two unilateral Emergency Administrative Orders (each an "EAO" and collectively the "EAOs") under Section 1431(a) of the Safe Drinking Water Act ("SDWA"), docket numbers SDWA-8-99-68 and SDWA-08-2001-33, as amended, concerning contamination of an underground source of drinking water ("USDW") in the East Poplar Oil Field ("Oil Field") on the Fort Peck Indian Reservation in northeastern Montana;

WHEREAS, Marathon Oil Company ("Marathon") was a Respondent to the EAOs based on alleged activities of Marathon's predecessor, TXO Production Corporation (referred to herein collectively with Marathon as "Marathon");

WHEREAS, Marathon filed a Petition for Review of First Amended Administrative Emergency Order, Docket No. SDWA-08-2001-33 ("Petition for Review") in the United States Court of Appeals for the Tenth Circuit;

WHEREAS, the Petition for Review is now pending in the Tenth Circuit;

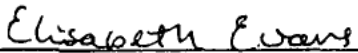
NOW THEREFORE, EPA and Marathon have entered into this Settlement Agreement with Conditional Release of Respondent Marathon ("Settlement Agreement") and agree as follows:

1. Based on information presented to EPA by Marathon detailing the results of investigations it conducted related to contamination of the USDW at the Oil Field, EPA has determined that Marathon should be released from the EAOs.
2. EPA hereby releases Marathon from the EAOs.
3. If, after execution of this Settlement Agreement, EPA receives new or additional information regarding contamination of the USDW at the Oil Field indicating it would be appropriate to take administrative or judicial action against Marathon under section 1431 of the Safe Drinking Water Act or any other applicable provision of law, EPA hereby reserves its right to do so.
4. Within ten (10) business days after issuance and execution of this Settlement Agreement, Marathon will move to dismiss with prejudice its Petition for Review.
5. This Settlement Agreement does not constitute a waiver, suspension, or modification of the requirements of any federal or state statute, regulation, or condition of any permit issued thereunder, including the requirements of the SDWA, which remain in full force and effect.
6. EPA and Marathon agree to bear their own costs and attorneys fees in connection

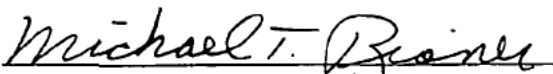
with this matter, including all administrative and judicial proceedings to date.

7. Each of the undersigned representatives of the parties to this Settlement Agreement certifies that he or she is fully authorized by the party represented to execute and legally bind the party to the terms and conditions of the Settlement Agreement.

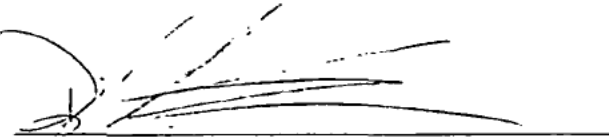
FOR THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY:


ELISABETH EVANS, Director
Technical Enforcement Program
Office of Enforcement, Compliance
and Environmental Justice
United States Environmental Protection Agency, Region 8

Date: 7/20, 2004


DAVID J. JANIK, Supervisory Attorney
Legal Enforcement Program
Office of Enforcement, Compliance
and Environmental Justice
United States Environmental Protection Agency, Region 8

Date: 7/20, 2004


DAVID A. CARSON
United States Department of Justice
Environment and Natural Resources Division
Suite 945 - North Tower
999 18th Street
Denver, Colorado 80202
(303) 388-7362

Date: 7/20, 2004

FOR MARATHON OIL COMPANY:

Edward A. Strenkowski

EDWARD A. STRENKOWSKI, Esq.

Marathon Oil Company

5555 San Felipe Road

Houston, Texas 77352-3128

Date: July 12, 2004



U.S. Department of Justice

Environment and Natural Resources Division

LJG:DAC
90-5-1-7-16553

David A. Carson
Environmental Defense Section
999 18th Street
Suite 945 North Tower
Denver, CO 80202

Telephone (303) 312-7309
Facsimile (303) 312-7331

July 23, 2004

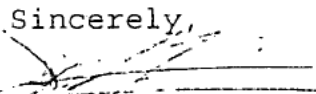
John D. Fognani, Esq.
Fognani Guibord & Homsy, LLP
1700 Lincoln Street
Suite 2222
Denver, Colorado 80203

Re: Marathon Oil Co. v. EPA, Appeal No. 01-9543

Dear John:

As requested, enclosed please find a copy of the
Administrative Order on Consent between EPA, Murphy, Pioneer
and Samson.

Sincerely,


David A. Carson, Senior Counsel
Environmental Defense Section

enclosure

cc: (w/out encl.)
Jim Eppers
Steven Moores
Nathan Wiser



U.S. Department of Justice

Environment and Natural Resources Division

LJG:DAC

David A. Carson
Environmental Defense Section
999 18th Street
Suite 945 North Tower
Denver, CO 80202

Telephone (303) 312-7309
Facsimile (303) 312-7331

July 23, 2004

via federal express

Scott M. DuBoff
Wright & Talisman, P.C.
1200 G. Street, N.W.
Suite 600
Washington, D.C. 20005-3802

Re: Murphy Tenth Circuit appeal


Dear Scott:

Enclosed please find the Stipulation for Dismissal for the Murphy case, which I have signed on behalf of EPA. Please sign it for Murphy, file it with the court and serve me with a copy.

Also enclosed is a copy of the Marathon release.

Please do not hesitate to call me directly at (303) 312-7309 if you have any questions. I appreciate all your hard work in helping to resolve this matter.

Sincerely,


David A. Carson, Senior Trial Counsel
Environmental Defense Section

enclosure

cc: James Eppers
Steven Moores
Nathan Wiser

UNITED STATES COURT OF APPEALS
FOR THE TENTH CIRCUIT

MURPHY EXPLORATION &
PRODUCTION COMPANY,

Petitioner,

v.

No. 02-9512


UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY,

Respondent.

STIPULATION TO DISMISS

Pursuant to discussions held under Tenth Circuit Rule 33.1, Federal Rule of Appellate Procedure 42(b), and the agreement of the parties, the undersigned hereby stipulate that the above appeal may be dismissed with prejudice. Each party shall bear its own costs on appeal.

SCOTT M. DUBOFF, Esq.
Attorney for Petitioner
Murphy Exploration & Production
Company



DAVID A. CARSON, Esq.
Attorney for Respondent
United States Environmental Protection
Agency

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8

2004 JUL 23 PM 1:40

IN THE MATTER OF:

Marathon Oil Company,

Murphy Exploration and Production Co.,

Pioneer Natural Resources USA, Inc., and

Samson Hydrocarbons Co.,

Respondents.

East Poplar Oil Field

Fort Peck Indian Reservation
Montana

Proceedings under Section 1431(a) of the
Safe Drinking Water Act,
42 U.S.C. §300g-i(a)

Docket No. SDWA-8-99-68
SDWA-08-2001-33

Settlement Agreement with
Conditional Release of Respondent
Marathon

WHEREAS, the United States Environmental Protection Agency, Region 8 ("EPA") issued two unilateral Emergency Administrative Orders (each an "EAO" and collectively the "EAOs") under Section 1431(a) of the Safe Drinking Water Act ("SDWA"), docket numbers SDWA-8-99-68 and SDWA-08-2001-33, as amended, concerning contamination of an underground source of drinking water ("USDW") in the East Poplar Oil Field ("Oil Field") on the Fort Peck Indian Reservation in northeastern Montana;

WHEREAS, Marathon Oil Company ("Marathon") was a Respondent to the EAOs based on alleged activities of Marathon's predecessor, TXO Production Corporation (referred to herein collectively with Marathon as "Marathon");

WHEREAS, Marathon filed a Petition for Review of First Amended Administrative Emergency Order, Docket No. SDWA-08-2001-33 ("Petition for Review") in the United States Court of Appeals for the Tenth Circuit;

WHEREAS, the Petition for Review is now pending in the Tenth Circuit;

NOW THEREFORE, EPA and Marathon have entered into this Settlement Agreement with Conditional Release of Respondent Marathon ("Settlement Agreement") and agree as follows:

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2. EPA hereby releases Marathon from the EAOs.
3. If, after execution of this Settlement Agreement, EPA receives new or additional information regarding contamination of the USDW at the Oil Field indicating it would be appropriate to take administrative or judicial action against Marathon under section 1431 of the Safe Drinking Water Act or any other applicable provision of law, EPA hereby reserves its right to do so.
4. Within ten (10) business days after issuance and execution of this Settlement Agreement, Marathon will move to dismiss with prejudice its Petition for Review.
5. This Settlement Agreement does not constitute a waiver, suspension, or modification of the requirements of any federal or state statute, regulation, or condition of any permit issued thereunder, including the requirements of the SDWA, which remain in full force and effect.
6. EPA and Marathon agree to bear their own costs and attorneys fees in connection

with this matter, including all administrative and judicial proceedings to date.

7. Each of the undersigned representatives of the parties to this Settlement Agreement certifies that he or she is fully authorized by the party represented to execute and legally bind the party to the terms and conditions of the Settlement Agreement.

FOR THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY:

Elisabeth Evans
ELISABETH EVANS, Director
Technical Enforcement Program
Office of Enforcement, Compliance
and Environmental Justice
United States Environmental Protection Agency, Region 8

Date: 7/20, 2004

Michael T. Brainer
DAVID J. JANIK, Supervisory Attorney
Legal Enforcement Program
Office of Enforcement, Compliance
and Environmental Justice
United States Environmental Protection Agency, Region 8

Date: 7/20, 2004

David A. Carson
DAVID A. CARSON
United States Department of Justice
Environment and Natural Resources Division
Suite 945 - North Tower
999 18th Street
Denver, Colorado 80202
(303) 388-7362

Date: 7/20, 2004

FOR MARATHON OIL COMPANY:

Edward A. Strenkowski

EDWARD A. STRENKOWSKI, Esq.

Marathon Oil Company

5555 San Felipe Road

Houston, Texas 77352-3128

Date: July 12, 2004



U.S. Department of Justice

Environment and Natural Resources Division

LJG:DAC

David A. Carson
Environmental Defense Section
999 18th Street
Suite 945 North Tower
Denver, CO 80202

Telephone (303) 312-7309
Facsimile (303) 312-7331

July 23, 2004

via federal express

Elizabeth E. Mack
Locke Lidell, & Sapp, L.L.C.
2200 Ross Avenue
Suite 2200
Dallas, Texas 75201-6776

Re: Samson Tenth Circuit appeals

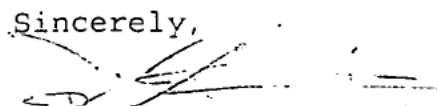
Dear Elizabeth:

Enclosed please find the Stipulations for Dismissal for the Samson cases, which I have signed on behalf of EPA. Please sign them for Samson, file them with the court and serve me with a copy of each one.

Also enclosed is a copy of the Marathon release.

Please do not hesitate to call me directly at (303) 312-7309 if you have any questions. I appreciate all your efforts in helping to resolve this matter.

Sincerely,


David A. Carson, Senior Trial Counsel
Environmental Defense Section

enclosure

cc: James Eppers
Steven Moores
Nathan Wiser

UNITED STATES COURT OF APPEALS
FOR THE TENTH CIRCUIT

SAMSON INVESTMENT COMPANY
and SAMSON HYDROCARBONS
COMPANY,

Petitioners,

v.

No. 01-9500

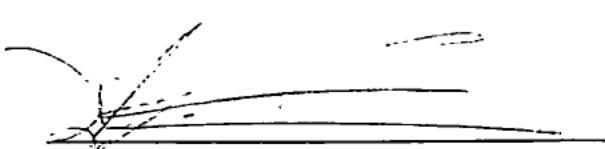
ENVIRONMENTAL PROTECTION
AGENCY,

Respondent.

STIPULATION TO DISMISS

Pursuant to discussions held under Tenth Circuit Rule 33.1, Federal Rule of Appellate Procedure 42(b), and the agreement of the parties, the undersigned hereby stipulate that the above appeal may be dismissed with prejudice. Each party shall bear its own costs on appeal.

ELIZABETH E. MACK, Esq.
Attorney for Petitioners
Samson Investment Company and Samson
Hydrocarbons Company



DAVID A. CARSON, Esq.
Attorney for Respondent
United States Environmental Protection
Agency

UNITED STATES COURT OF APPEALS
FOR THE TENTH CIRCUIT

SAMSON HYDROCARBONS
COMPANY,

Petitioner,

v.

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY,

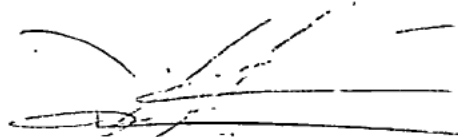
Respondent.

Nos. 02-9510
02-9511

STIPULATION TO DISMISS

Pursuant to discussions held under Tenth Circuit Rule 33.1, Federal Rule of Appellate Procedure 42(b), and the agreement of the parties, the undersigned hereby stipulate that the above appeals may be dismissed with prejudice. Each party shall bear its own costs on appeal.

ELIZABETH E. MACK, Esq.
Attorney for Petitioner
Samson Hydrocarbons Company



DAVID A. CARSON, Esq.
Attorney for Respondent
United States Environmental Protection
Agency

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8

2004 JUL 20 PM 1:40

IN THE MATTER OF:

Marathon Oil Company,

Murphy Exploration and Production Co.,

Pioneer Natural Resources USA, Inc., and

Samson Hydrocarbons Co.,

Respondents.

East Poplar Oil Field

Fort Peck Indian Reservation

Montana

Proceedings under Section 1431(a) of the
Safe Drinking Water Act,
42 U.S.C. §300g-i(a)

Docket No. SDWA-8-99-68

SDWA-08-2001-33

**Settlement Agreement with
Conditional Release of Respondent
Marathon**

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WHEREAS, Marathon Oil Company ("Marathon") was a Respondent to the EAOs based on alleged activities of Marathon's predecessor, TXO Production Corporation (referred to herein collectively with Marathon as "Marathon");

WHEREAS, Marathon filed a Petition for Review of First Amended Administrative Emergency Order, Docket No. SDWA-08-2001-33 ("Petition for Review") in the United States Court of Appeals for the Tenth Circuit;

WHEREAS, the Petition for Review is now pending in the Tenth Circuit;

NOW THEREFORE, EPA and Marathon have entered into this Settlement Agreement with Conditional Release of Respondent Marathon ("Settlement Agreement") and agree as follows:

1. Based on information presented to EPA by Marathon detailing the results of investigations it conducted related to contamination of the USDW at the Oil Field, EPA has determined that Marathon should be released from the EAOs.
2. EPA hereby releases Marathon from the EAOs.
3. If, after execution of this Settlement Agreement, EPA receives new or additional information regarding contamination of the USDW at the Oil Field indicating it would be appropriate to take administrative or judicial action against Marathon under section 1431 of the Safe Drinking Water Act or any other applicable provision of law, EPA hereby reserves its right to do so.
4. Within ten (10) business days after issuance and execution of this Settlement Agreement, Marathon will move to dismiss with prejudice its Petition for Review.
5. This Settlement Agreement does not constitute a waiver, suspension, or modification of the requirements of any federal or state statute, regulation, or condition of any permit issued thereunder, including the requirements of the SDWA, which remain in full force and effect.
6. EPA and Marathon agree to bear their own costs and attorneys fees in connection

with this matter, including all administrative and judicial proceedings to date.

7. Each of the undersigned representatives of the parties to this Settlement Agreement certifies that he or she is fully authorized by the party represented to execute and legally bind the party to the terms and conditions of the Settlement Agreement.

FOR THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY:

Elisabeth Evans
ELISABETH EVANS, Director
Technical Enforcement Program
Office of Enforcement, Compliance
and Environmental Justice
United States Environmental Protection Agency, Region 8

Date: 7/20, 2004

Michael T. Brainer
DAVID J. JANIK, Supervisory Attorney
Legal Enforcement Program
Office of Enforcement, Compliance
and Environmental Justice
United States Environmental Protection Agency, Region 8

Date: 7/20, 2004

David A. Carson
DAVID A. CARSON
United States Department of Justice
Environment and Natural Resources Division
Suite 945 - North Tower
999 18th Street
Denver, Colorado 80202
(303) 388-7362

Date: 7/20, 2004

FOR MARATHON OIL COMPANY:

Edward A. Strenkowski

EDWARD A. STRENKOWSKI, Esq.

Marathon Oil Company

5555 San Felipe Road

Houston, Texas 77352-3128

Date: July 12, 2004



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466
Phone 800-227-8917
<http://www.epa.gov/region08>

AUG - 5 2004

Ref: 8ENF-UFO

The Come Residence
[REDACTED]

Re: Drinking Water Supplies

Dear Come family,

The United States Environmental Protection Agency ("EPA") has reached an agreement with Murphy Exploration & Production Company ("Murphy"), Samson Hydrocarbons Company ("Samson"), and Pioneer Natural Resources USA, Inc. ("Pioneer") with regard to the proposed drinking water pipeline supply that has been the subject of EPA's concern over the past several years. As you may know, in 1999 and 2001 EPA issued unilateral orders to these companies to address homeowners' water well supplies located in or near groundwater contamination in the vicinity of the East Poplar Oil Field. Your home was referred to in those unilateral orders. EPA's unilateral orders were appealed by Murphy and Samson. On July 20, 2004, EPA issued an Administrative Order on Consent ("AOC"), agreed to by all three of the oil companies.

At the time of its original unilateral orders, EPA had concerns about the possibility of oilfield contamination at your water well. Over the course of the last several years, EPA has obtained information that leads the agency to now believe there is no immediate threat of oilfield contamination at some water wells, including yours. Accordingly, the provisions in the AOC concerning the dimensions of the drinking water supply pipeline do not require the oil companies above to construct the pipeline to your homesite.

In order to ensure that no oilfield contamination is present in your water well, the AOC requires the oil companies to annually collect a water sample from your home over the next eight years. The water samples will be analyzed for oilfield contaminants and the sample results provided both to you and EPA. The oil companies must begin collecting annual water sample prior to July 20, 2005. EPA requests that you grant the oil companies (or their contractor) access to your home for the purpose of obtaining a water sample. The water sample should be collected as close as possible to the actual water well, preferably before entering any water treatment equipment you may have.



Printed on Recycled Paper

In addition, the AOC allows the oil companies to cease delivery of bottled water to your home, since there may be no immediate threat of contamination to your water well.

If you should have any questions about this matter, please feel free to contact Nathan Wiser of my staff at (303) 312-6211. You can also dial toll-free at (800) 227-8917 during normal business hours and ask for Mr. Wiser at extension 6211.

Sincerely,

Elisabeth Evans

Elisabeth Evans
Director
Technical Enforcement Program

cc: Sid Campbell, Vice President
Murphy Exploration & Production Company
131 South Robertson Street (70112)
P.O. Box 61780
New Orleans, LA 70161-1780

Mark Dalton, Manager, Environmental & Safety Services
Samson Hydrocarbons Company
Samson Plaza
Two West 2nd Street
Tulsa, OK 74103-3103

Wilbur Dover, Manager, Operations Services
Pioneer Natural Resources USA, Inc.
1400 Williams Square West
5202 North O'Connor Blvd.
Irving, TX 75039-3746

Deb Madison, Manager Environmental Programs
Assiniboine & Sioux Tribes
P.O. Box 1027
Poplar, MT 59255



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466
Phone 800-227-8917
<http://www.epa.gov/region08>

AUG - 5 2004

Ref: 8ENF-UFO

The Iva Grainger Residence
[REDACTED]

Re: Drinking Water Supplies

Dear Grainger family,

The United States Environmental Protection Agency ("EPA") has reached an agreement with Murphy Exploration & Production Company ("Murphy"), Samson Hydrocarbons Company ("Samson"), and Pioneer Natural Resources USA, Inc. ("Pioneer") with regard to the proposed drinking water pipeline supply that has been the subject of EPA's concern over the past several years. As you may know, in 1999 and 2001 EPA issued unilateral orders to these companies to address homeowners' water well supplies located in or near groundwater contamination in the vicinity of the East Poplar Oil Field. Your home was referred to in those unilateral orders. EPA's unilateral orders were appealed by Murphy and Samson. On July 20, 2004, EPA issued an Administrative Order on Consent ("AOC"), agreed to by all three of the oil companies.

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In addition, the AOC allows the oil companies to cease delivery of bottled water to your home, since there may be no immediate threat of contamination to your water well.

If you should have any questions about this matter, please feel free to contact Nathan Wiser of my staff at (303) 312-6211. You can also dial toll-free at (800) 227-8917 during normal business hours and ask for Mr. Wiser at extension 6211.

Sincerely,

Elisabeth Evans

Elisabeth Evans
Director
Technical Enforcement Program

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AUG - 5 2004

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The Kohl Residence
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Director
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The Lien Residence


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AUG - 5 2004

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The Zimmerman Residence
[REDACTED]

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Director
Technical Enforcement Program

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CONCURRENCE COPY

Ref: 8ENF-UFO

The Come Residence
[REDACTED]

Re: Drinking Water Supplies

Dear Come family,

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8ENF-UFO
N. Wisen
8-4-04



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Director
Technical Enforcement Program

cc: Sid Campbell, Vice President
✓ Murphy Exploration & Production Company
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bcc: ✓ Steven Moores 8RC
✓ Jim Eppers 8ENF-L
✓ Barbara Burkland 8MO



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The United States Environmental Protection Agency ("EPA") has reached an agreement with Murphy Exploration & Production Company ("Murphy"), Samson Hydrocarbons Company ("Samson"), and Pioneer Natural Resources USA, Inc. ("Pioneer") with regard to the proposed drinking water pipeline supply that has been the subject of EPA's concern over the past several years. As you may know, in 1999 and 2001 EPA issued unilateral orders to these companies to address homeowners' water well supplies located in or near groundwater contamination in the vicinity of the East Poplar Oil Field. Your home was referred to in those unilateral orders. EPA's unilateral orders were appealed by Murphy and Samson. On July 20, 2004, EPA issued an Administrative Order on Consent ("AOC"), agreed to by all three of the oil companies.

At the time of its original unilateral orders, EPA had concerns about the possibility of oilfield contamination at your water well. Over the course of the last several years, EPA has obtained information that leads the agency to now believe there is no immediate threat of oilfield contamination at some water wells, including yours. Accordingly, the provisions in the AOC concerning the dimensions of the drinking water supply pipeline do not require the oil companies above to construct the pipeline to your homesite.

In order to ensure that no oilfield contamination is present in your water well, the AOC requires the oil companies to annually collect a water sample from your home over the next eight years. The water samples will be analyzed for oilfield contaminants and the sample results provided both to you and EPA. The oil companies must begin collecting annual water sample prior to July 20, 2005. EPA requests that you grant the oil companies (or their contractor) access to your home for the purpose of obtaining a water sample. The water sample should be collected as close as possible to the actual water well, preferably before entering any water treatment equipment you may have.

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In addition, the AOC allows the oil companies to cease delivery of bottled water to your home, since there may be no immediate threat of contamination to your water well.

If you should have any questions about this matter, please feel free to contact Nathan Wiser of my staff at (303) 312-6211. You can also dial toll-free at (800) 227-8917 during normal business hours and ask for Mr. Wiser at extension 6211.

Sincerely,

Elisabeth Evans
Director
Technical Enforcement Program

cc: Sid Campbell, Vice President
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